

SOCIAL RESEARCH

AN INTERNATIONAL QUARTERLY
OF POLITICAL AND SOCIAL SCIENCE

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MINERAL DEVELOPMENT AND ECONOMIC GROWTH*

BY CHARLES E. ROLLINS

OF THE possible ways in which economic growth of the under-developed areas of the world might be furthered, one that has received considerable recent attention is via the inflow of capital from the advanced nations to develop the supplies of raw materials which have not, as yet, been intensively utilized in many of these areas. This attention has grown out of an increasing awareness, particularly in the United States, that the industrialized nations are faced with rising raw-material costs in many important lines unless alternative cheap sources of supply are developed. It has been reinforced by prolonged discussion of the poorer countries' need for an inflow of foreign capital if their growth is to proceed, and the realization that raw-material production is the area in which private capital has in the past been most readily interested and in which it remains interested, given an appropriate investment climate.

Little attention has been given, however, to making explicit the manner in which the development of raw materials can be expected to lead to economic growth in the source country. The present paper presents a hypothesis in answer to this question, and discusses some of the obstacles to its realization in today's world.

The paper will be restricted in several ways. First, it considers

* AUTHOR'S NOTE—The ideas expressed in this paper are the result primarily of rather detailed studies of developments in Bolivia during the years of extensive tin-mining operations in that country, and of developments in Venezuela since the country became an important oil producer. I wish to thank the Stanford Committee for the Study of Social Change and the Social Science Research Council for their generous financial assistance. Of the many individuals, both in this country and in Latin America, who aided in the collection and preparation of the data, I should like particularly to acknowledge the contributions of Professors Paul A. Baran and Bernard F. Haley of Stanford University. Responsibility for remaining shortcomings is of course my own.

only the results of investment in non-agricultural raw materials; while the conclusions reached are largely applicable to agricultural developments, the transference cannot be made without further analysis, since in general the proportion of agricultural raw-material output that is supplied by small local producers is very much greater than is the case with mineral or petroleum operations. Second, I shall consider only the "old" underdeveloped economies; the relatively recently populated countries that might also be regarded as to a large extent underdeveloped, such as Canada or Australia, will be excluded. Finally, I am primarily concerned with private growth; the prospects for centrally controlled advance are not considered.

Within these restrictions the general conclusion reached is that projects of this type are not likely to lead to the economic development of the source country. Integration of such undertakings into the domestic economy tends to be too incomplete, and the revenues made available too small, given prevailing conditions, for development to result.

The Hypothesis

The ways in which mineral projects might be expected to contribute to economic growth will be grouped in two general categories: direct influences and fiscal influences. The first includes all those influences that result from direct contact of the mineral project with other sectors of the economy, and the second includes those elements that enable the state to contribute to the growth process.

DIRECT INFLUENCES

Probably the most important of the stimulating secondary effects to be expected from a mineral-development project is the expansion of markets and incomes. The increase in economic activity represented by the establishment of the enterprise means an expansion of markets: any item used in the operations can conceivably be supplied from internal sources. The employment of local workers in the undertaking will create new incomes, which will

further broaden the domestic market. To the extent that the newly created incomes are saved rather than spent, new sources of investment funds will be made available.

An important consideration is that these benefits are entirely net: new markets are created and no attempt is made to enter established ones; new incomes are created and no internal funds are required to pay them. Further, the nature of the operations, which makes this so—the fact that the original capital comes from abroad and the product is sold abroad—has an important contributing characteristic for the prospects of growth: the accrual of foreign exchange. All receipts will be in foreign currency, and to the extent that costs consist of local expenditures such currency will be placed at the disposal of the country concerned. The means are thereby provided to obtain those goods required for growth which are not available in the internal market.

Stimulation may also be forthcoming from the supply side. The mineral project will provide a new, presumably lower-cost, source of supply of the material concerned. This will represent a cost-reducing factor, and also open up the possibility of various processing activities designed to place the product on the export market at a more advanced stage of transformation.

Local workers may be expected to provide the major portion of the working force, and these workers, through experience as a part of a rationalized operation, will to a greater or lesser extent acquire the industrial discipline required by such undertakings. In so far as they receive specialized training in the operation of the machinery employed, or with regard to modern methods of operations, they will acquire higher skills. In this manner a pool of skilled labor may be established which will then become available for use in other types of developments within the country.

There may in addition be a favorable influence on the social structure. The institution of a mineral-development project in an underdeveloped area transplants a representative sample of an economically progressive culture into an economically less progressive culture, and in so far as the raw-material development becomes an

integrated part of the source community's economy, a culture or set of values more favorable to economic advance may be adopted.

FISCAL INFLUENCES

Yet even if it does not become an integrated part of the economy, the mineral exploitation still may contribute to further economic growth in a less direct manner: by the channeling of funds through the fiscal authorities. The enterprise will be required to pay various taxes for the privilege of carrying out its operations, and the funds thus collected may be used by the state to stimulate further growth quite independent of the mineral development.

With the funds thus made available, conditions can be made more favorable to the expansion of private investment activity by, for example, improving market conditions and developing external economies. Some of the external economies can be directly provided: roads can be built, power facilities expanded, labor skills trained, and such activities can be undertaken largely with domestic resources, thus providing additional effective demand. In addition, or alternatively, the capital itself can be funneled into the hands of private persons or enterprises, through the establishment of industrial and agricultural banks that will loan the funds to individuals willing to undertake desirable investment projects.

The two channels set forth, through direct economic contact with the domestic economy, and through the agency of the fiscal authorities, are not of course mutually exclusive; they can perfectly well operate concurrently. But the considerations involved in determining the probability that the process as described will actually materialize are quite different in the two instances; and in any actual development process one or the other is likely to be clearly dominant. Therefore in the remainder of this paper, devoted to examining the practical probabilities of these possibilities, the two types of influences will be considered separately.

Direct Influences

With regard to those influences that result from direct contact of the mineral scheme with other sectors of the economy, the con-

clusion is that such undertakings are not likely to lead to general economic growth in the way described, because they do not become integrated into the economy of the source country to the extent required.¹

One of the most commonly encountered characteristics of economically underdeveloped regions is the existence of a relatively small, rather highly developed monetary sector (frequently organized around foreign enterprises of the type under consideration, and practically always oriented toward the export market) in the midst of a much larger "native" economy that continues to be organized on the old semi-feudal or tribal basis, and to be but little affected by the monetary sector.

Bolivia is a good example. The mining operations there are quite self-contained; special mining communities have been erected to accommodate those working in the mines, and these settlements are in many respects quite isolated from the rest of the internal economy. The United Nations Mission of Technical Assistance to Bolivia, in its *Report* (1951), takes note of the establishment of a market economy around the mines, largely as a result of the undertaking of these operations, and then observes (p. 85) that "this new trading economy remained divorced to an extraordinary degree from that of the rest of the country." Four-fifths of the populace continued to find their subsistence in feudally organized agriculture, remaining quite untouched by the intrusion of the mining companies.

Although to a lesser degree, the Venezuelan oil fields present the same picture. Special oil camps have grown up, and these have relatively little contact with the rest of the economy. Were it not for the government revenues paid, the petroleum operations could

¹ This has been recognized in a general way for some time. Singer, for example, argued in 1950, in a somewhat broader framework, that the integration did not take place and that the raw-material project had better be regarded as a part of the investor's economy, since it was here that the main secondary effects occurred. See H. W. Singer, "Distribution of Gains Between Investing and Borrowing Countries," in American Economic Association, *Proceedings*, vol. 40 (May 1950) pp. 473-87.

more properly be considered a part of the economy in which the investing companies are domiciled than of Venezuela itself.²

In Africa and Asia the split appears to be even sharper than generally prevails in Latin America, since the non-monetized sector of the economy has in general been undisturbed by direct outside intervention for a longer period, and therefore has more completely retained its old forms and customs.³

From the present point of view the most important manifestation of this lack of economic integration is that expenditures within the country, aside from tax payments, tend to be limited to a rather small percentage of the value of output. Mining operations are capital-intensive, and therefore wage payments, the chief item of local expenditure, are less there than in many lines. The capital equipment used in the operations is almost certain to be purchased abroad, since it is unlikely to be produced in the underdeveloped areas. These two items, along with transport costs (which again tend to be paid either to the government or to a foreign concern), make up the bulk of costs. An extractive industry is likely to use relatively little of the crude materials produced in an economically backward area, the chief possible exception being domestically produced fuels. Resulting profits will, of course, be paid abroad, since the project is financed with foreign capital.

Figures in this area are difficult to obtain, but some estimates have been made. In Venezuela, local-currency expenditures of the oil companies (exclusive of government payments) have not exceeded 20 percent of the value of exports; ⁴ some seven-eighths of these expenditures have gone to meet wages and salary payments, with the remainder used to make purchases within the country.

² United Nations, Economic Commission for Latin America, *Recent Facts and Trends in the Venezuelan Economy* (mimeographed for presentation at the 4th Session of the United Nations Economic and Social Council, Mexico City, May 1951) pp. 6-7.

³ See, for example, Julius H. Boeke, *Economics and Economic Policy of a Dual Society* (New York 1953).

⁴ Banco Central de Venezuela, *Memoria, 1950*, p. 36.

Judging from an unpublished study of the International Monetary Fund, the comparable figure applicable to the Chilean copper operations is also about 20 percent; the share of labor and material costs in this figure cannot be determined. For the Bolivian mines it has been estimated that during the last half of the 1940s about 25 percent of total receipts were required to meet wage payments, but this is undoubtedly high because the low official rate of exchange was used to compare dollar sales figures with boliviano wage figures.⁵ It is estimated that less than 5 percent of Middle East oil revenues are paid out as wages, while in recent years from one-fourth to one-third of total mining receipts have gone toward wage payments in the Northern Rhodesian mines;⁶ it seems probable that the high Rhodesian percentage results from the fact that Europeans make up an important part of the mine labor force in that country, and the wage scale of this group is substantially higher than that of Rhodesian workers.

This failure to spend extensively in the internal economy has a bearing in two important ways on the possibilities of self-generating growth. In the first place, the extent to which a mineral development scheme will actually provide new markets for domestic products is considerably smaller than the possibilities envisioned in the hypothesis outlined in the preceding section. Even the stimulus provided by the wage payments is less than might appear at first glance, for the raw-material operations are often removed from established production centers, and, since transport facilities to the exterior must be established to sell the product, it may well prove easier and cheaper to bring even consumption goods from abroad than to purchase them within the economy. To the extent that this is so the wage payments do not add to the internal market, since they leave on the very first spending round. This effect is very noticeable in the case of the Bolivian tin companies, for example. For many years the companies maintained stores

⁵ M. D. Pollner, *Problems of National Income Estimation in Bolivia* (Master's Thesis, New York University, 1952) p. 39.

⁶ United Nations, *Development of Mineral Resources in Asia and the Far East* (Bangkok 1953) p. 40.

that were largely stocked from abroad, and although in recent years (since the mines have been nationalized) efforts have been made to change this situation, shelves remain stocked to a significant degree by foreign goods.

Secondly, the prospects of an accrual of domestic capital in the private sector are also rather slight under these conditions. The major item of local expenditure is wage payments, and in a poor country it is very unlikely that these will provide a source of capital. These wage payments are certain to go almost entirely for consumption goods, in an attempt to raise the very low standard of living; further, the higher officials of the company (and therefore those receiving the highest wages) are normally brought in from abroad, their salaries are paid in foreign currency, and such savings as they may make seldom remain in the raw-material-producing country. Savings result largely from profits, and since these are paid abroad this source is eliminated.

It is also easy to exaggerate the extent to which the labor force is likely to be provided with new skills. The bulk of the more skilled technicians and practically all the professional and managerial staff are commonly brought in from abroad. The majority of the local labor employed is unskilled, and it is doubtful whether most of such skills as are acquired can be readily transferred to other types of industrial employment. The imposition of industrial discipline is likely to make the workers significantly more suitable for other nonskilled industrial work, but here one must recognize that the proportion of the working force so affected is likely to be very small. In Venezuela 3 percent of the labor force is engaged by the petroleum sector, in Bolivia about 5 percent in the tin mines, in Chile less than 1 percent in the large copper mines, in Malaya in recent years about 2 percent in the tin mines, in Iraq and Iran probably less than 2 percent in the oil operations. In some countries, with very small populations and large developments, the percentage is of course higher (for example, about 10 percent in the Northern Rhodesian copper mines, and certainly much higher proportions in the territories

of Kuwait and Bahrein, where the oil industry has been responsible for about 90 percent of the national income in recent years); but these cases are rare. When we consider that not all these workers are available to shift to other activities, but only those amenable to change, the importance is further decreased. While a small group of skilled workers might be able to exert considerable economic influence, it is unlikely that an unskilled, even though disciplined, group will be able to do so.

Possibilities of stimulation from the supply side are likewise slight, and have not in fact been realized to any significant degree. The best possibilities have existed in the case of petroleum, which may make available to a rather wide segment of industry a lower-cost source of fuel and power. In addition, refineries have been established in some of the underdeveloped producing countries, thereby making possible a new industry on the basis of the raw-material operations; but trends are toward the establishment of refining plants in the consuming countries, except where legal enactments require refining to be undertaken in the source country.

In other lines prospects are less good. Steel mills have in some cases been constructed in underdeveloped countries on the basis of iron-ore deposits, but the causal relation has more often than not been in reverse order; that is, the iron-ore deposits were developed because a steel mill was desired. Other metals offer much less promising prospects; tin, copper, lead, and the like tend to be used in rather advanced manufacturing processes, and are consumed almost entirely in the leading industrial countries. Even the concentrating of the ore takes place abroad in many cases, and in no case has any metal-fabricating industry expanded to major proportions.⁷ The growth of processing or fabricating plants on the basis of a raw-material supply in an underdeveloped economy would require the production of materials to be sold very largely abroad, and therefore in a market where the most that could be hoped for would be equal treat-

⁷ *Ibid.*, p. 38.

ment in such matters as tariffs. It is highly unlikely that many such undertakings could be successfully established in the face of the competition of established producers in the advanced nations.

Superimposed on all these difficulties is another rather general characteristic of the underdeveloped countries: not only are they not developed, but even now they are not developing very rapidly. In most of them there does not exist a sufficiently vigorous entrepreneurial class to take advantage of these new opportunities, even to the extent that they do arise. Prevailing social structures, value systems, and monopolistic tendencies all militate against the undertaking of any considerable investment activity. It is not, for example, as though there were actual or potential business enterprises eagerly awaiting the availability of new members in the industrial labor force; in most of the larger cities of the underdeveloped world there are already more laborers than can be occupied in the existing state of affairs, and the problem of urban unemployment is a serious one. Many skills are lacking, to be sure, but these, as was pointed out above, are unlikely to be made available by mineral projects.

Fiscal Influences

The second and more important way in which a mineral project might lead to economic growth is through the agency of the fiscal authorities. There are here three stages of the envisioned process at which difficulties might arise and which must be investigated. First, is capital in fact likely to accrue to the governments concerned in sufficient magnitude to provide an effective base for a program of development? Second, is such capital as does accrue likely to be utilized in a manner calculated to stimulate development? Third, if both the first and the second question are resolved favorably, are such actions likely to succeed in stimulating the required investment activity in the private sector? Each of these questions must be answered in the affirmative if growth is to result.

THE MAGNITUDE OF FUNDS

A good idea of the order of magnitude of the funds likely to accrue to the governments concerned can be obtained by examining the recent history of the leading raw-material producers among the underdeveloped countries. I shall here consider Bolivia, Venezuela, Chile, Mexico, Northern Rhodesia, Belgian Congo, Malaya, Indonesia, Iran, and Saudi Arabia. These countries as a group dominate the production, as far as the underdeveloped areas are concerned, of oil, rubber, and nearly all the important minerals, if importance is determined by the value of output.

Thus figures computed from the *American Bureau of Metal Statistics Yearbook* indicate that Bolivia supplies over 20 percent of the world's tin and nearly 30 percent of the antimony, ranks behind only the United States and Portugal with 10 percent of the tungsten, and turns out significant quantities of copper, lead, silver, zinc, and wolfram. Venezuela accounts for some 30 percent of the petroleum produced outside the United States. Chile has in recent years produced 20 percent of the world copper supply (nearly half originates in the United States and Canada), and is the only important source of natural nitrates. Mexico turns out 16 percent of the total lead produced (again about half comes from the United States and Canada), 11 to 12 percent of the zinc (between 50 and 60 percent from United States and Canada), over 20 percent of the antimony, some 30 percent of the silver, 3 percent of the copper, and minor amounts of some other nonferrous metals. Northern Rhodesia supplies over 11 percent of the copper, about 10 percent of the cobalt, and around 1 percent of the lead and zinc. The Belgian Congo produces nearly 8 percent of the copper, 3 percent of the zinc, 9 percent of the tin, about 75 percent of the cobalt, and small amounts of lead. Malaya and Indonesia jointly supply the bulk of the world's natural rubber, and one-third and one-fifth respectively of the tin output. Iran, prior to the nationalization dispute, ranked third (after only the United States and Venezuela) in the production of petroleum, and Saudi Arabia is now third.

Estimates of the fiscal receipts that have resulted from these operations are, unfortunately, available in only a few cases, and less direct methods must be used. In determining these magnitudes an upper limit is obtained from data on the value of the product produced; fiscal accruals will depend, of course, on the profitability of the operations and the manner in which the "profits" are divided between the companies and governments concerned.

Table 1 shows, for the years 1948-53 inclusive, the average annual value of exports of the above enumerated raw materials from each of the countries listed. The figures cannot be regarded as exact, since the problem of conversion between currencies is involved, but they are sufficiently accurate to give a good idea of the relative magnitudes. Also shown are population figures and

Table 1—RAW-MATERIAL EXPORT VALUES, 1948-53,
AND POPULATION, 1950 ^a

	<i>Average</i> <i>Annual Exports, 1948-53</i>		<i>Population, 1950</i>	
	Total (in million \$)	Per Capita (in \$)	Total (in millions)	Per Sq. Kilom.
Venezuela	\$1189.1	\$237.8	5.0	5
Malaya	781.2	150.2	5.2	40
N. Rhodesia	168.2	88.5	1.9	2
Saudi Arabia	415.0 ^b	63.8	6.5	3
Chile	242.5	41.8	5.8	8
Bolivia	97.7	32.6	3.0	3
Iran	610.5 ^c	32.5	18.8	12
Belgian Congo	151.1	13.1	11.5	5
Mexico	160.8	6.3	25.4	13
Indonesia	388.2	5.3	73.5	49

^a Sources—United Nations, *Yearbook of International Trade Statistics*; International Monetary Fund, *Balance of Payments Yearbook* and *International Financial Statistics*; United Nations, *World Demographic Yearbook*.

^b Estimate.

^c 1948-50 average.

per capita export values. The countries are listed in order of per capita exports.

The Venezuelan per capita export figure is far above any other, the decline thereafter being so rapid that the Venezuelan figure is nearly six times that for the fifth-ranking country, Chile. All indications are that if fiscal-receipt figures were available the disparity would be even greater; the Venezuelan petroleum industry is a very profitable one, and the government share of the gains has been relatively large. Just how profitable these operations have been can be seen by observing the "profit" that has been available to be shared in one manner or another between the companies and the government; the figures are given in Table 2. It is unlikely that this situation is equaled in many other instances.

Table 2—GROSS INCOME, TAXES, AND PROFITS OF THE VENEZUELAN PETROLEUM INDUSTRY, 1943-52 (dollar figures in millions)^a

	Gross Income	Tax Payments	Net Profits	Total "Gross" Profits	
				In mil- lion \$	In % of Gross Income
1943	\$ 195	\$ 26	\$ 32	\$ 58	30%
1944	270	85	84	169	63
1945	343	101	89	190	55
1946	473	135	143	278	59
1947	755	194	246	440	58
1948	1112	329	377	706	64
1949	956	349	343	692	72
1950	1183	287	369	656	56
1951	1413	407	407	814	58
1952	1486	436	408	844	57

^a Sources—Figures for gross income and net profits, 1943-49, from H. J. Struth, *Venezuela Holds Key to Needed Oil Supplies* (mimeographed, Caracas 1953; reprint of three articles from *World Petroleum*, February, March, April, 1952); for 1950-52 from Banco Central de Venezuela, *Memoria, 1953*, mimeographed edition, p. 4-C-19. Tax figures compiled by author, and do not include payments to the government for specific goods or services used in production.

The "gross" profit percentage earned by the large Chilean copper mines is less than 50 percent, that of the Bolivian tin mines is probably less than 40 percent, and in neither case do the "costs" include social investments like those carried out in Venezuela.

Actual fiscal payments can be obtained in a few cases, and indications of probable magnitude in others. The figures for Venezuela, Chile, and Bolivia are given in Table 3, which shows that the disparity between Venezuela and the other two producers is, on the average, even greater in regard to tax payments than in regard to per capita export values. In recent years tax payments in Venezuela have amounted to more than the total per capita income of some underdeveloped areas.

From fragmentary data regarding fiscal receipts in Iran and Malaya it is clear that there the disparity is even more marked. Oil revenues in Iran, including the tax implicit in the low rate

Table 3—TAX PAYMENTS IN THE POSTWAR PERIOD,
VENEZUELA, CHILE, BOLIVIA *

	<i>Venezuelan Oil</i>		<i>Chilean Copper and Nitrates</i>		<i>Bolivian Minerals</i>	
	Total (in million \$)	\$ Per Capita	Total (in million \$)	\$ Per Capita	Total (in million \$)	\$ Per Capita
1945	\$101	\$20	\$25.7	\$ 4.4	\$14.1	\$4.7
1946	135	27	22.7	3.9	13.3	4.4
1947	194	39	53.4	9.2	11.6	3.9
1948	329	66	60.4	10.4	20.5	6.8
1949	349	70	40.5	7.0	21.2	7.1
1950	287	57	37.4	6.4	15.2	5.1
1951	407	81	60.6	10.4		
1952	436	87				
1953	460	92				

* Sources—Venezuelan and Bolivian figures compiled by author; Chilean figures from unpublished International Monetary Fund study. All figures must be taken as only approximate, especially because of the difficulty of selecting a "correct" exchange rate.

of exchange applied to the purchase of foreign exchange from the oil companies, appear to have amounted to about \$60 million in 1948-49 and again in 1949-50, and to perhaps \$80 million in 1950-51.⁸ This means that some 10 to 12 percent of the value of petroleum exports accrued to the Iranian government; in Venezuela the corresponding figure is over 25 percent. Thus the disparity between the two countries' per capita fiscal receipts is much greater than that between their per capita export values.

The same is true of Malaya. There it appears that a maximum of 15 percent of the tin and rubber export receipts may have been paid to the state at the height of the boom in 1951-52; in the half-dozen preceding years the percentage was perhaps half that figure, and it has fallen again in the last few years.⁹

The funds received by the Venezuelan government from petroleum development have, then, been quite out of proportion to those received by other governments as a result of the exploitation of industrial raw-material resources within their borders. The only countries with any prospects of achieving levels comparable to the Venezuelan are some of the more sparsely populated Middle East oil producers. In the overwhelming majority of instances the revenues have been only a fraction of the Venezuelan returns, and it is not likely that the future will change the existing picture appreciably. A study of nineteen Latin American countries¹⁰ has shown, on the basis of the expanded consumption foreseen by the President's Materials Policy Commission, that only seven of these countries can be expected to have even as large a volume of raw-material exports per capita in 1975 as prevailed in 1950. Of the seven, only one is expected to show a substantial increase—Venezuela, where by 1975 the figure is

⁸ See United Nations, Department of Economic Affairs, *Public Finance Information Papers, Iran* (New York 1951), and Bank Melli, Iran, *Annual Report*.

⁹ See Federation of Malaya, Department of Statistics, *Monthly Statistical Bulletin*; Great Britain, Board of Trade, *Malaya* (London 1952); United Nations, *Statistical Yearbook*.

¹⁰ See Inter-American Economic and Social Council, *Secretariat Report on the Long Term Prospects of Latin American Exports to the United States* (Washington 1953).

expected to be almost 45 percent higher than that of 1950. The next country is El Salvador, which is expected to show an 11.3 percent increase.

Not only is there, in Venezuela, a very much larger volume of available funds, but the purely economic obstacles to development are less serious there than in many instances. The country is sparsely populated, and the natural-resource endowment, even aside from oil, is high. It is clear that Malaya, for example, with a population density eight times as great, has a more difficult problem with which to contend. It is important to recognize the exceptional position held by Venezuela in these respects, for the Venezuelan experience is sometimes held up as an example of what can be accomplished—for instance in the 1952 report of the President's Materials Policy Commission (vol. 1, p. 61). In view of the differences in the magnitudes of the funds involved, the Venezuelan case cannot be legitimately used as an example of the results to be expected in other instances.

THE UTILIZATION OF FUNDS

Having obtained a reasonably good idea of the magnitude of funds likely to result from raw-material developments, we have still to consider whether these funds will be used to promote growth. It is sometimes implied (as in the report of the President's Materials Policy Commission) that such funds will be regarded as distinct from "general revenues," that everyday government functions can and will be financed with "normal" receipts, and that the returns from raw-material projects can be applied to special projects—in order to stimulate growth.

Of central importance in this connection is the magnitude of the payments in relation to the accustomed budget, and the speed with which the volume of payments changes. If the payments are small, and if they increase gradually, they are likely simply to be incorporated into the general revenue and never to be treated in a special way, even if they should eventually grow to be the basis of the entire revenue system. On the other hand, if the payments are large in relation to existing income, and if

they increase in sudden spurts, they are much more likely to be regarded as something available over and above what is required to meet operating expenses; special attention is then likely to be given (and somewhat different criteria applied) to their disposal, and the possibility that they will be devoted to developmental expenditures is correspondingly increased.

For example, there is no evidence that Bolivian tin revenues were ever regarded as in any way a distinctive segment of general receipts. The tin revenues never, in absolute terms, reached really large magnitudes; they increased rather slowly up to the late 1930s, and from that point on remained approximately steady. Normal administrative expenses grew along with receipts, and at no time was there a significant volume of revenues over and above the level of immediately preceding years the disposal of which had to receive conscious consideration. The mining operations did, it is true, come to be regarded as the central source of fiscal receipts, but this meant only that the normal operating budget was prepared on the basis of how much this sector was expected to yield. The mining receipts were not regarded as a marginal payment that could be utilized for development spending.

In Venezuela, on the other hand, the oil revenues were large (in relation to a relatively adequate level of receipts), and they increased at a very rapid rate at several points. Ordinary administrative expenses showed a steady tendency to increase, but considerable funds remained available for other types of activity. Special attention was perforce given to their disposal. Concern arose in some quarters as to what would happen should these large receipts stop. It was realized that the oil was in fact an exhaustible resource, and the slogan "sow the petroleum" was phrased: the funds should be invested in order to prepare against the day of exhaustion. In Bolivia there has never been similar concern, in spite of the fact that tin is an equally exhaustible resource and that exhaustion is a very much more imminent possibility than is the case with Venezuelan oil.

In general, revenues received by governments of oil-producing countries have tended to accrue in bursts and to be of considerable size, and their disposal is therefore likely to receive more conscious attention. Almost all the important oil-producing countries seem aware of the desirability of financing a development plan with their oil receipts—although this does not in all cases lead to its actual undertaking. This is not, however, likely to be the case in most raw-material-producing countries; materials other than oil are likely to yield a much lower volume of revenue.

The degree to which these revenues, if they are indeed regarded in a special light, will be expended on projects designed to promote growth will depend on the set of values of the particular government concerned. Although the extent to which most governments in the underdeveloped world have devoted their attention and resources to promoting growth is disappointing, it is not appropriate to extrapolate these experiences into the future. It may be expected that as the desire for economic advance throughout the underdeveloped areas continues to increase, governments will become more concerned with this aspect of their spending programs.

A study of the manifold social and economic forces which together will determine government policy as to development is quite beyond the scope of the present investigation. But it is relevant to investigate the extent to which mineral development in itself is likely to add to or detract from the probability of particular governments adopting a vigorous development policy. There are several factors indicating that such influence as is exerted is likely to be adverse.

To begin with, the establishment of an important export industry in the midst of an underdeveloped economy, an economy that is likely to be dominated by a semi-feudal type of organization, is likely to focus interest to an unwarranted degree on this sector and on dealings with the external world, with a consequent slighting of the internal economy. The extent to which attention is centered on the mineral sector will depend on several things.

The more important the new project is within the monetary sector of the economy, the greater will be the attention it receives, for it is from the monetary sector that the state derives its revenues and with which its activities are primarily concerned, except in so far as these activities may be directly aimed at stimulating development in the non-monetized sectors. Also, the closer the operations are to the center of government in a geographic sense, the greater is the attention likely to be given them. And finally, the extent to which the industry is able or willing to provide its own external economies will be an important factor.

The Bolivian tin-mining operations provide an excellent example of the importance that such a negative influence can attain. The tin mines were established in an economy very largely dominated by feudal agriculture. Within this economy they created a monetary sector (the cities and mines of the altiplano) whose chief interests were oriented toward the advanced Western nations where the tin was sold, and which remained to an extraordinary degree separated from the bulk of the populace, who continued in their old ways. Government functions were almost entirely concerned with city activities, and the government itself was controlled by the city populace. (Until 1952 voting rights were restricted to the literate, and this provision, given the prevailing system of education in the country, automatically eliminated practically all the rural populace. Further, governments have been superseded by revolt with much greater frequency than by ballot.) Although the legal capital of the country is Sucre, the *de facto* capital has long been La Paz, the center of the commercial and financial dealings of the mining sector, and in actual fact control of La Paz has meant control of the country.

In the first quarter of this century, when the need for modern means of transportation became apparent, government attention and funds were devoted for many years to the construction of a rail network, and this network was almost exclusively designed to serve the needs of the mining industry. Not only did it fail to serve as an effective stimulus to the rest of the economy but

actually it was a detriment, since it provided much better transportation facilities with the outside than with the other sectors of the internal economy and therefore facilitated the competition of foreign agricultural and industrial goods with Bolivian production. Again, at the end of the 1930s, when there was talk of aiding various sectors of the domestic economy, the first action was the establishment of the Mining Bank, designed to aid the small miners, who represent an insignificant part of the whole, in terms both of numbers and of potential contribution to the national economy.

The Venezuelan petroleum operations present a quite different picture in this respect. When oil entered the Venezuelan economy the country already had a well developed export trade in coffee and cocoa. These crops were grown in the higher lands that follow the Andean chain and were transported along this chain to Puerto Cabello or Caracas, where they were shipped to the exterior, and it was in this area that the political and social control of the country was centered. When the oil operations were begun they were located not here, but in the lowlands bordering Lake Maracaibo, and the oil was shipped out and supplies entered through Maracaibo; it was here that the effect of oil was felt, while the center of government was well removed in Caracas. And, finally, the industry not only has provided its own transport facilities but has carried out significant social spending which would normally be considered a government responsibility. The composite result has been that the Venezuelan government has been substantially free from pressure to concentrate on the petroleum sector at the expense of the rest of the economy.

It is not likely that many countries will be so fortunate in this respect. Venezuela, by Latin American standards, was a relatively prosperous country, and had a correspondingly highly developed monetary sector, prior to the arrival of the oil companies; and Latin America in turn appears to be somewhat better off economically than the bulk of Asia and Africa. In

addition, the petroleum industry in Venezuela is an extremely profitable undertaking, and it is unlikely that many other operations will be so well situated in this respect and thus so able to provide completely for themselves.

In addition to this possibility of distortion, introduced by the mere presence of the mineral development, there is the further probability that, in so far as the companies concerned exert influence in the political affairs of the country, this influence will militate against the adoption of a vigorous development policy by the state. This is so for a variety of reasons: mineral-development projects have little or nothing to gain and much to lose by the economic growth of the source country; and many of the development policies of the state are likely to be against the immediate interest of the companies concerned.

In so far as economic growth of the source country affects at all the price of the raw material, this effect will be favorable to the private company's profit, since such growth will represent a growth in demand. This, however, is likely to be a negligible effect in most cases, for the internal use of the product will become significant only when the country has reached a rather advanced stage of development. Although petroleum, for example, may be sold in significant quantities to the internal market at a relatively early stage in the growth process (in Venezuela at the present time from 4 to 5 percent of total production is internally consumed), most of the products under consideration are utilized only in rather advanced stages of manufacture.

The effect of growth on costs of production for the mineral industry is much more immediate, and is detrimental. As productivity increases in other sectors of the economy, wages tend to rise. While in the industrial and agricultural sectors these increased costs can be offset (and indeed are made possible) by the adoption of improved techniques, and the squeeze on profits may therefore not be felt, this solution is possible to a much smaller degree in the mineral-production sphere. Mining and petroleum operations carried on by foreign companies in under-

developed areas in general utilize roughly the same methods of production as are in use in the advanced economies in which these companies are based.

Mineral producers have, then, in a very real sense, a vested interest in the continued backwardness of the economy in which their production operations are carried on. Growth of this economy would be unlikely to increase the price at which the product could be sold, and would be certain to lead to cost increases, the net result being a fall in profits.

If raw-material producers have a long-run interest in avoiding the economic growth of the country in which they operate, they have an even greater immediate interest in avoiding the adoption of many governmental policies of the type likely to be necessary to bring about such growth. The requirement of additional revenue to finance a development program will immediately affect the mining companies, for, being at the center of the monetary sector, they represent the logical target for new impositions. The promotion of local industry or agriculture through restricting imports, while it *may* in the long run result in cheaper products, will certainly in the short run raise costs in so far as the products concerned are utilized by the mineral producers. The use of foreign-exchange controls to allocate available exchange in a manner conducive to growth will again in no way aid the mineral producers; in so far as they are affected at all their freedom of action will be restricted, since they are important suppliers of exchange. These are only a few of the more general measures that might be undertaken. That they are recognized as contrary to the interests of raw-material producers is evidenced by the frequency with which complaints against such measures are voiced.

The fact that economic growth in general and some specific measures that may accompany it are not in the interest of mineral producers does not necessarily mean that these groups will offer open or strong opposition to a development program. While their attitude will clearly depend on all the circumstances of each particular case, one important factor is certain to be the

present profitability of the operations and their long-range prospects. For example, the Venezuelan oil companies have not openly opposed government actions of this sort (the actions taken have been relatively mild), and an important reason is undoubtedly the fact that the profit position of these companies and the long-run prospects of the industry are excellent; under such conditions it would be most unwise to voice strong protests at the risk of arousing ill will.

It is unlikely that many industries find themselves in such a fortunate position. That individuals do not always react so wisely as have the Venezuelan companies, even in rather similar situations, is suggested by the recent history of Anglo-Iranian Oil in Iran, where the timely making of a concession might have salvaged most of what was lost. That some industries do not consider themselves to be in a position where they can afford such magnanimity, and that they may not hesitate to exert considerable political pressure when government measures threaten to affect their costs adversely, can be illustrated by the attitude of the large tin-mining companies in Bolivia. Government taxation, social requirements, and exchange regulations were clearly considered excessive by the mining interests; there is good evidence that reinvestment was held to a low level after the late 1930s because of this; and the companies took political measures in an effort to change the adverse government policies.

Thus while we cannot say whether a particular government is likely to utilize funds made available to it by a raw-material industry in order to promote the economic development of the country, we can say that the presence of the mineral scheme may well prejudice such a possibility; and a situation in which its presence would be a positive factor is difficult indeed to conceive.

RESPONSE OF THE PRIVATE SECTOR

We come finally to the third area of possible difficulty: is it likely that private investment will respond to the stimulus provided by an appropriate government-spending policy? This is the most difficult question to answer, and perhaps the crucial point

in the whole matter, for what is involved is whether there are in the country individuals or institutions in the roles of capitalist entrepreneurs; and if not, whether the provision of external economies and direct assistance to the degree made possible by the funds available will be sufficient to activate such a group. If such an institutional structure already exists, then government assistance of the type discussed will quite clearly result in a speeding of the growth process. It is where such institutions are not already established that difficulties will probably be encountered, for in these cases rather strong measures are likely to be required to establish them.

There is first of all the broad issue of the role of nationalism in the development of an economic and social structure conducive to a high level of domestic investment, and the compatibility of foreign-owned raw-material schemes with strong national feeling. It is beyond the scope of the present paper to consider this issue, but it is suggestive that of the Latin American nations, Brazil, Mexico, and Argentina appear to have progressed farthest in establishing a functioning entrepreneurial class—and it is in precisely these countries that nationalism has been an important feature and that opposition to the establishment of foreign-owned mineral and petroleum undertakings has been most insistent.

But quite apart from the possibility that developing nationalism and a developing domestic capital market may go hand-in-hand, the measures likely to be required for the establishment of the desired institutional structure are difficult to carry out. A well functioning investment structure must do two things: it must accumulate income; and the income, once accumulated, must be directed to productive investment. The first of these functions is performed only too well in most underdeveloped economies (as is evidenced by the extreme inequality in income distribution which generally prevails); it is the second which is defaulted. Those individuals who receive the accumulated income too frequently prefer to spend it on consumption goods (many of which are imported) or to hoard it (often abroad for greater safety).

If investment is to take place this group must be induced to change its spending pattern, or the income must be transferred to another group that has been induced to adopt the desired values—unless, indeed, the sums of money available for the investment program (especially foreign exchange) are so large that the new group can be given sufficient income and none need be taken from the old.

In such circumstances "positive" incentives are unlikely to be sufficient. The achievement of an adequate investment level in the private sector is likely to require also the imposition of "negative" measures. That is, it will prove necessary not only to offer inducements, in the form of external economies and low-interest loans, to those willing to undertake the desired investment projects, but also to place obstacles in the path of those who wish to utilize the available resources for other purposes. And this will be especially true of foreign exchange, since the desire for imported goods, particularly on the part of the well-to-do who cling to the old spending habits, and the necessity of importing an important part of the goods required for the investment program, will make the pressure especially severe in this area. In a word, private investment is likely to respond to the stimulus of an appropriate government-spending policy only if this is carried out in conjunction with other measures designed to force private expenditures into the desired channels; and these latter measures are, in general, of the type contrary to at least the short-run interest of the raw-material producers.

Developments in Venezuela are of interest in this connection. The economic measures adopted there have without an important exception been of a "positive" nature. Assistance has been offered to those who chose to invest funds in industry or agriculture; penalties have not been attached to choosing otherwise, nor have obstacles been erected to make choosing otherwise particularly difficult. It is not possible to state with conviction that this program has brought into existence a native entrepre-

neurial class. Local funds and initiative have gone into commercial activity on a considerable scale, but attempts to promote advance in agriculture have met with almost complete failure, and there is strong doubt regarding success in the industrial sphere, where growth has been substantial but heavily concentrated on a few items, and where foreign initiative and capital have played a central role in the erection of nearly all of the new industries that have come into existence.¹¹

It must be borne in mind that in Venezuela the period of really large-scale government expenditures began only a decade ago, that some success has been realized, and that with the passing of more time it is probable that an institutional framework will evolve which will result in a quickening of the growth process. But the magnitude of the sums involved in Venezuela compared with what can be expected to be available elsewhere, in relation to population and resources, makes this last consideration not too consoling. During recent years an annual sum of \$300 million has been spent there on what may be termed developmental expenditures. Even if it is assumed that this figure includes an important amount of waste, it still represents a sum that not many other countries are likely to manage.

Conclusions

Is it probable that the development of a mineral resource in an underdeveloped country will lead to general economic growth? We may first recognize one group of countries for which the answer is yes. This group comprises those countries in which an institutional structure conducive to investment is already in existence; here the provision of additional funds will clearly speed the development process. It is for this reason that the "new" countries, such as Canada or Australia, have not been considered in this paper. These countries have long had advancing Western

¹¹ For a discussion of recent developments in Venezuela see my "Economic Development in Venezuela," in *Economic Development and Cultural Change* (October 1955) pp. 82-93.

European capitalism as a social and economic background, and they have no important indigenous population to convert. An institutional framework favorable to growth is present in these areas, and in Canada, for example, the undertaking of mineral development schemes has undoubtedly speeded the country's economic advance.

In the "old" underdeveloped areas the situation is quite different. In Central and South America the colonizing powers were Spain and Portugal, the part of Western Europe where the economic growth of capitalism has even now not materialized, and in most Latin American countries there are important Indian populations to be converted. In Asia the institutional structure is again quite different, and the European populace a tiny part of the whole. The same is true of Africa, with the important exception of the Union of South Africa (where a large European population dominates the economy and where considerable economic growth has taken place, aided to an important degree by the development of the gold and diamond mining operations). In these "old" underdeveloped areas the country that already has an institutional basis fostering economic growth can with justification be regarded as quite exceptional.

For these countries the answer to our question will generally be no. These countries are at an early stage in the development process. Income levels are low, and a large part of the economy remains on a semi-feudal basis. In such a situation the establishment of an important mineral project will loom large, and, as was discussed above, the dangers of an unwarranted focusing of attention on this sector are considerable. If this danger is overcome another conflict is faced. The funds obtained by underdeveloped countries from mineral schemes will, in most cases, be sufficiently small to require the most careful husbanding if they are to finance an economic advance of significant size; and the measures required to ensure that the funds are so used will be of a type regarded as contrary to the interests of the mineral producers.

If, prior to the consideration of a raw-material-exploitation possibility, there were in power a government willing and able to take the measures necessary to promote development, it is unlikely that large-scale investments would be made, for the country would be regarded as one in which a "hostile" investment climate prevailed. If such a government came to power after the scheme had begun, the companies involved could be expected to oppose the adoption of the necessary measures. If the companies prevailed there is little chance that development would result; if they did not, a variety of solutions might result, depending on the exact complexion of the government and the degree to which the concerns involved chose to carry their opposition. The solution might be an uneasy truce, such as now prevails between the copper companies and the government in Chile, where the companies have lost much of their freedom of action in the disposal of both copper and the foreign exchange received, yet still maintain a strong bargaining position, largely because of their ability to withhold investment funds. Or the companies might oppose these measures so strongly that if the government eventually prevailed they would lose everything; this has been the result in Bolivia.

It must be recognized, I think, that the exploitation of an industrial raw material by foreign capital does not involve the community of interest often envisioned. The desire for development on the part of the source country will in most cases necessitate measures that conflict with the desires of the private investor for an appropriate investment climate. If the funds involved are sufficiently large, as has been the case in Venezuela, the flood of dollars may be sufficient to dissolve the difficulties: the country can achieve considerable development while still leaving the investor a relatively free hand. In the vast majority of cases, however, this will not be a possibility; rapid development will have to be sacrificed or the investor must forgo some of his prerogatives, as these are presently conceived.

ATOMIC STALEMATE AND WAR ECONOMICS

BY ARTHUR SCHWEITZER

THE advent of atomic technology and warfare has created a crisis for military strategy and a vacuum for war economics. In fact, we find ourselves between two stages—between non-atomic and atomic warfare, old and new war economics. Atomic technology has not yet crystallized into a definite pattern of warfare and economic mobilization. We are thus forced to ride on two horses at the same time. Economic mobilization of the type of World War II cannot yet be discarded; the new type of economic preparation for atomic warfare is not yet fully known. Logically, it is easy to see how this uncomfortable and expensive situation could be terminated. Either Soviet Russia or the United States could plunge into an extensive military and economic preparation for all-out atomic warfare. Whoever took this fatal decision would force the other opponent to adopt the same military and economic strategy; each power would seek to employ a surprise attack and administer the fatal blow first. Actually, and fortunately, this shift in military and economic strategy is resisted with great vigor in both leading countries.

In this country, as the articles of General Ridgeway show, most of the leading army officers are opposed to exclusive preparation for atomic warfare. All three economic power blocs—big business, farmers, and laborers—are set against such a policy. This resistance has led to great dissension within the armed forces, with the result that the Eisenhower administration does not seem to have a consistent military strategy and policy. A stalemate on military strategy has arisen that has not yet been overcome by the Secretary of Defense. The air force operates on the strategy of an expected atomic warfare, whereas the other branches seem to employ atomic weapons as an improvement of a World War II

strategy. Neither military nor civilian government agencies seem to have arrived at any principles for the war economy of the future.

On the face of it, the Soviets too seem to have run away from the problem by a "flight into peace." Internal resistance to an atomic-war policy seems to be growing in the Soviet Union. Yet so long as there is no genuinely accepted disarmament policy, it is very risky to accept peace talks as a reliable substitute for the past Russian policy of military aggression. Until both powers agree and implement a workable disarmament policy, both the United States and the Soviet Union will be faced with the same military alternative. Shall we maintain two kinds of military forces, each promoting a different strategy? Or shall we reorganize and concentrate all our military and economic efforts for atomic warfare?

It so happens that the rulers of the Nazi regime faced a similar situation in the years 1936-39. The issue was for them: shall military and economic mobilization aim at a total war or at a series of *Blitzkriegs*? This decision led, as the captured documents reveal, to a power struggle of major proportions within the one-party state. It affected the position of the dictatorial party, of the *Generalität*, and of big business in the regime. The primarily military issue created ideological, political, and economic disputes (as well as some thrillers of intrigue), all of which exerted a significant influence on the outcome of the dispute. All the participants in the struggle saw it as a dispute about the central question: which particular method of warfare and war economy will be most effective in realizing the common goal of German imperialism?

Although the differences between the Nazi situation of the 1930s and the atomic issue now facing the United States and the Soviet Union are very great, there are four similarities between the two dictatorial regimes that make a comparison feasible: in the Soviet Union, as in Nazi Germany, a one-party dictatorship rules the country; the party believes in an ideology that calls for

aggression, thus making defeat of the enemy imperative or highly desirable; a new military technology has developed that raises the question whether a new military strategy does not offer unexpected opportunities for military aggression; and the rulers have the power to establish a type of war economy most suitable to their military strategy.

Rulers of one-party dictatorships enjoy an informational monopoly. The whole process of decision-making is kept secret. Motives are not aired, factions are not revealed, debate takes place behind a screen, the implicit principles of the disputants are not known to the public. Decisions are not published. Their results become known only in terms of actions which again are not open to public scrutiny. Analysis of the Nazi struggle for a new military strategy and type of war economy, based on formerly secret documents, offers an opportunity to clarify our expectations in regard to future alternatives of Soviet military and economic policies. In analyzing this specific piece of Nazi economic experience, I hope to show that the comparative method will apply especially to periods when there is a break in the continuity between present and future events. If successful, the comparative method would assist our present techniques of forecasting precisely at the point where projections fail us.

Moreover, a comparison between the strategy and economics of Blitzkriegs and atomic warfare will assist us in arriving at more definite expectations as to the nature of our economic efforts for military preparedness. An answer is sought in the last section as to whether and why we have to maintain permanently a large defense sector in our economy.

The Generals' Total-War Economy

The Germans' dispute on military strategy was waged with military, political, and economic arguments. Nazis and Generals had different war goals that gave rise to different concepts for a future war economy. The notion of a colossal economic preparation for total war was dear to the hearts of most Generals and some Ad-

mirals. The concept of a small economic war effort was pushed by Hitler. What was the nature of these contemplated war economies, and how did they evolve in the Nazi regime?

The General Staff of the regular army developed its concept of war economics in the first half of the 1930s. Military strategy would determine what kind of economic preparation for war was necessary. Most Generals accepted the thesis that World War I was lost because of the "breakdown of the home front." This belief crystallized into the determination to mobilize the economy extensively in advance of military engagements. The military strategy of a total assault and of a superior war economy in time of peace, many Generals and officers believed, would enable Germany to win the next war.

What was the military strategy of a total assault? When the Nazis came to power, the General Staff reassessed the various strategic possibilities. A compromise was reached between those who favored a motorized, short, and small war and those who believed that the war would be long, total, and exhaustive. The central feature of the strategy selected was to be a land war fought by the infantry. A mass army would have to be built up. Yet certain units should be motorized and equipped with modern tanks and other weapons of attack. The primary function of the air force should be to give maximum support to the infantry through attack on military targets as well as protection against the enemy air force. Putting the mass infantry at the center, but incorporating motorized and movable units and utilizing the air force, was regarded as building up an "integrated military force."¹

In guessing at the length and extent of the prospective war, most of the leading officers of the regular army accepted the concept of a total war. Germany would have to fight a war on two fronts. The best equipped army, with the largest reservoir of manpower, material, and economic resources, would have the best chance of winning it. Military and economic superiority would have to be

¹ "Umgestaltung der Kriegsführung," in *Militär-Woche*, November 11, 19, 1935.

attained by Germany prior to the war. Realization of this goal would require a period of about fifteen years. Estimating in 1935, General Staff officers expected to have attained the position of military and economic superiority in 1950.² This expectation set the war goal for the regular army.

What is the best form of economic and military preparation for such a strategy? Among General Staff officers, the problem of preparedness was considered in terms of "armament in width" and "armament in depth."³ The possible extent of armament in width depends on the strength of the population: the extent of the male population of military age, its military training in the past, and the opportunities for training additional millions in the future. Armament in depth is determined by the economic strength of a nation, that is, its economic resources, its degree of economic mobilization prior to a war, and the opportunity for further mobilization during a war. In consequence, "armament in width" became identical with military mobilization; "armament in depth" was very akin to economic mobilization.

The economic division of the General Staff suggested a twofold relationship between military and economic mobilization. On the one hand, each was complementary to the other. Extensive military forces without sufficient supplies of all sorts would readily be defeated. Large supplies, without the proper armed forces to utilize them fully, would be a waste of economic resources and would thus diminish the military strength of the nation. To maximize the economic and military strength of Germany therefore required a systematic coordination of the two forms of mobilization, according to definite but continuously adjusted military and economic plans. On the other hand, both forms of mobilization were competing for the same economic resources. A too exten-

² See the testimony of General Thomas as reported in United States Strategic Bombing Survey, *The Effects of Strategic Bombing on the German War Economy* (Washington 1945).

³ The main concepts were developed in the war-economy division of the General Staff. See George Thomas, "Breite und Tiefe der Rüstung," in *Militärwissenschaftliche Rundschau* (1937) pp. 93 ff.

sive conscription program would reduce the labor force unduly. Steel used for producing weapons and munitions could not be utilized for enlarging plants and industries. It was essential to ascertain the relative significance of each form of mobilization, to develop a list of priorities for each program, and to allocate the scarce resources between the competitive uses of military and economic mobilization.

A large military establishment would require extensive economic support. The greater the width of armament, the greater must be the economic strength of Germany. In comparison with other countries, especially the United States and Russia, Germany's economic resources were seen to be very small. This would set limits to the extent of armament in depth. Five conditions for increasing Germany's resources were spelled out.

First was the financial strength of the nation, which comprised its gold and foreign-exchange holdings. Both must be maximized in order to obtain as many raw materials and foodstuffs as possible from other countries prior to war. The internal monetary resources or the foreign debt would not constitute a limit to economic mobilization. The military thus accepted inflationary financing of the war effort as a matter of course.⁴

Second, the actual and potential supply of foodstuffs for the nation would provide the basis for its economic mobilization. Extensive stores of foodstuffs, especially grains, were essential to feed the armed forces, to avoid starvation of civilians in case of bad crops, and to compensate for the decline in agricultural output during wartime when laborers, machines, and fertilizers would be in short supply. The accumulated stores would have to be large enough to cover the total demand for many months at the beginning of a war.

⁴ The thesis that "fear of inflation" prevented the Nazis from building up a war economy in peacetime—see Burton Klein, "Germany's Preparation for War," in *American Economic Review* (March 1948)—can find support only in the arguments and actions of one segment of big business, led by Schacht. Neither Nazis nor Generals shared the "fear of inflation." They were only cumbersome and clumsy in devising methods for financing economic mobilization.

Third, the supply of raw materials was crucial. Increase of the armed forces would entail a greatly increased demand for military supplies, while the country's raw-material situation could not be changed immediately. Sustained extension of raw-material supply was not possible through imports, which could be cut off by enemy action. In order to provide a sufficient volume of raw materials, it was thus necessary to establish new plants for the production and extraction of domestic raw materials long before war.

Fourth, it was equally essential that the capacities of manufacturing enterprises which produced materials for the armed forces be substantially enlarged. The rise of the armed forces required a considerable expansion of the existing plants of war-material producers. Expansion of industrial capacity was said to be an indispensable precondition for any enlargement of the armed forces, and for any increase in future supply of weapons and munitions.

And fifth, the supply of labor was directly and indirectly influenced by armament in width. Intensified conscription would reduce the volume of the labor force directly. Increased demand for military supplies would indirectly employ manpower for the armed forces. The result would be an extensive scarcity of laborers which would call for a careful control of the labor market.

In evaluating the resources of Germany for a future war, General Thomas saw one main limiting factor, the small supply of foreign exchange, which could hardly be improved to any significant extent. All other limitations to a war economy could be overcome. The economic division of the General Staff thus arrived at the conclusion that the real domestic bottlenecks for a speedy military and economic mobilization lay in the scarcity of raw materials, industrial capacities, and laborers.

In order to remove these bottlenecks, Thomas made two proposals. On the one hand, military and economic utilization of resources must be coordinated through cooperation between the operational and the economic divisions of the General Staff. Thomas demanded publicly that his division be given the authority to examine all operational plans of the armed forces for their

prospective demands on the economy. He would thereby obtain a kind of veto power over military planning for the future. This demand was rejected by the operational divisions of all three of the armed forces. Instead, the economic division was able to review only the army's requirements for military materials.⁵ Even here, lengthy negotiations were called for which did not often succeed in reconciling these demands with the productive capacities and outputs of the industries concerned.

On the other hand, the economic division presented to the General Staff a program of armament in depth which included five provisions: an extension of the basic industries, like coal and steel; production of synthetic substitutes; control of investments in order to expand industrial capacities of essential plants; accumulation of foodstuffs, especially grain; and husbanding of imported materials, such as oil and alloys.

The economic division of the General Staff thus had a peculiar concept and time table for maximizing the economic war effort. In the first phase, the total of available industrial resources should be increased; consumption should be lowered only indirectly by keeping wage rates stable. The greatest emphasis should be placed on improved methods of production, technological developments, intensified efficiency in the utilization of factors, plus an enlarging of the producer-goods industries at the expense of consumer-goods industries. In the second phase, emphasis would be placed on diverting real resources from civilian to military uses through a lowering of the standards of living, consumption of existing capital, and a decline of future real investments.

Economic activities in the first phase should create a preparedness economy (*Wehrwirtschaft*) prior to war. With the beginning

⁵ Navy and air forces refused to submit their requirements to the economic division of the War Ministry for review, as Thomas complained bitterly. See his "Grundlagen für eine Geschichte der deutschen Wehr- und Rüstungswirtschaft," 1943. This unpublished book is an excellent source for the economic intentions and actions of the German army from 1936 to 1942. I am indebted to Mr. Fred Niebergall, chief of the Documentation Branch of the Evidence Division of the United States Chief of Council for War Crimes, for making available to me a copy of this document.

of war, the economic activities would lead to a full-fledged war economy.⁶ For each period or type of war economy a specific plan of economic mobilization was to be worked out and implemented under the direct guidance and direction of the Generals.

Such was the ideal of German military imperialism. When the crises of raw materials and foreign exchange threatened the rearmament boom in 1936, leaders of the regular army were in a position to propose an alternative program to the idea of military equality. It was their concept of a preparedness economy, of a war economy in time of peace, that was destined to supersede the rearmament boom and usher in a second phase of the regime's economic policy.

What new ideas did the reformulated military imperialism of the 1930s contribute? The distinction between armament in width and armament in depth incorporated the economy into the sphere of military preparation for war. The period of a war economy was thus to exceed the war itself, by beginning prior to and ending long after military campaigns. In addition to this new relationship between war and economy, economic mobilization was to be planned in great detail and for long periods. Economic planning was thus accepted by the Generals and translated into a major feature of the war economy. In military thinking, planning became a device for gaining economic superiority in order to win a total war. The expectation of the Generals was that once supremacy over Europe was achieved, economic planning would play a minor role and the capitalist price system would again act as the major regulator of the economy.

Hitler as a War Economist

Hitler felt a considerable distaste for economics. His phrase that "politics is prior to economics" led him to depreciate the value of economic principles. The rearmament boom from 1933 to 1936

⁶ The economic intentions of the Generals, but hardly the actual economic policy, lend support to the thesis that the Nazi regime did build up a military economy soon after its inception. See Otto Nathan, *The Nazi Economic System* (Durham 1944).

did not force him to concern himself with economic issues, since he was satisfied to leave decisions on economic policy in the hands of Schacht.

The situation changed when rearmament had reached its limits and a new economic course had to be chosen. Since the officers of the regular army and the conservatives of big business quarreled with one another over rearmament, Hitler felt himself called upon to act as an umpire in the dispute and thereby select a new economic policy.

The memorandum on the Four-Year Plan was Hitler's first significant pronouncement on war economics.⁷ The first part dealt with the basic economic problem and its ultimate solution. The gist of it was that Germany had insufficient living space for her population; he saw an urgent need for new economic and territorial space for Germany. The other part concerned itself with the period of transition, during which an extensive policy of economic autarchy should be pursued. On the face of it, general and transitional policy contradicted each other. The former suggested an expansion, the latter a contraction, of Germany's volume of economic transactions with other nations. How was this contradiction to be resolved?

It took Hitler about a year to find a definitive answer to this question. His economic goals went, of course, in the direction of imperialism. Hitler's basic idea was that the populational, political, economic, and military problems of Germany could be solved through the creation of a fascist empire. This goal was to be attained through a military strategy of lightning warfare and through the economic policy of exploiting subdued or conquered nations. From the beginning to the end of the regime, Hitler remained a firm and consistent believer in racialism and fascist imperialism. The goal of a fascist empire in Europe became the goal of the Nazi party in the years 1934-35. This goal was imposed on Germany

⁷ For the full text of this crucial memorandum see Document NI-4955 in the collection of the Army Records Branch, Alexandria, Virginia. It was first revealed by Speer in the Nürnberg trials.

in 1938, when it became the ultimate aim of Nazi governmental policies.

Motivated by this goal, Hitler formulated a new foreign policy of deception and violation of contracts, of dividing the enemies and conquering them one by one. Effective in breaking important international treaties, Hitler did not believe in the proposition of an effective coalition of the powers east and west of Germany. The "degeneration of the West," the ideological conflict between Bolshevism and capitalism, would prevent the French-Russian treaty of 1936 from leading to an effective political and military alliance. The aim of foreign policy was, he asserted in a secret conference, to split the other powers, isolate them from one another, and defeat each one separately.

Hitler was basically opposed to the idea of a total war. He insisted that the integrated military force should be employed in a series of localized but speedy wars. Lightning warfare he believed to be feasible because of the new developments in military technology. The motorization of land forces, the extensive development of the tank, the improvement of air warfare, would put an end to trench warfare. Military strategy would again have to be built on the elements of movability and surprise. Forces best equipped with these modern weapons, able to move quickly and to hit the enemies' weakest spots decisively, could be sure of victory.

Hitler disclosed his military strategy to the Minister of War, the Foreign Minister, and the three Commanders-in-Chief of the armed forces in a secret meeting of November 5, 1937.⁸ A German empire would have to be established by 1943-45. Expansion would have to begin in Central Europe. Occupation of Austria and Czechoslovakia would enable Germany to obtain soldiers for twelve new divisions, and secure additional foodstuffs for 5 to 6 million people. A common border with Hungary would free the east of Germany from future attack, since Poland would then be surrounded by Germany on three sides. Invasion of Austria and

⁸ For the "Hossbach Minutes" of Hitler's secret conferences (in German) see International Military Tribunal, *Documents in Evidence*, vol. 25, pp. 402-13.

Czechoslovakia was thus presented by Hitler as a plan to obviate the danger of a two-front war. Not only the victims but also the Allied guarantors of Central Europe were to be paralyzed by the surprise and effectiveness of this operation. The next step would be an expansion toward Poland. In Hitler's opinion these risky attacks could be undertaken because the alliance between East and West would not stand the test of war.

Hitler was convinced that Germany had "nothing to gain from a prolonged period of peace." The present superiority of German arms, in modernity and caliber, could soon be equaled by the potential enemies. Nazi Germany's present leaders could die. Thus Germany had to strike soon in order to be assured of victory and of a conquest at the lowest cost.

Foreign Minister von Neurath and Commander-in-Chief von Fritsch opposed this military strategy of Hitler's. The former argued that such a course was too risky; the latter tried to convince Hitler that the German armed forces were inadequately prepared for a two-front war. But when von Fritsch presented his arguments, on November 9, 1937, Hitler staged one of his rages. He became convinced that his strategy of lightning warfare would never be fully accepted by the present Commander-in-Chief and General Staff. To eliminate them, Hitler seized on the abominable calumny perpetrated by Himmler, who had attacked the personal honor of von Fritsch. Hitler dismissed Fritsch, Neurath, and Blomberg just nine weeks after the conference of November 1937. These dismissals initiated a purge. Sixteen high-ranking Generals were relieved of their commands; forty-four Generals and a host of senior officers were transferred to other duties.⁹

Ostensibly, the whole affair began as a correction of the immoral activities of the two leading men in the army, based in one case on fabricated evidence. In Hitler's hands, the fight against "immorality" ended with a wholesale reorganization of the army. When he had destroyed the old leadership of the regular army,

⁹ Graf von Kielmansegg, *Der Fritsch-Prozess, 1938* (Hamburg 1949); John W. Wheeler-Bennett, *The Nemesis of Power* (New York 1954) Chapter 2, Part III.

when he had eliminated the office of War Minister, when he had set up his own General Staff, Hitler annexed Austria. On May 30, 1938, the "Operation Green" was adopted which detailed the occupation of Czechoslovakia. Hitler's strategy of lightning warfare had thus become the military program of action for Nazi Germany.

Having established a new foreign policy and a successful strategy, Hitler turned to economics. What was the relationship between Blitzkriegs and war economics? Two problems arose which Hitler discussed on various occasions. One dealt with the relative economic weakness of Germany. The other was concerned with the economic requirements for a series of Blitzkriegs. What were the answers Hitler gave to these questions?

The basic "German question" was one of overpopulation. The German mass of 85 million people was too large for its available living space. Since an increase in the birth rate was to be expected and was highly desirable, the solution had to be sought in finding greater economic space. Hitler evaluated first the contrary proposals of autarchy and of a greater share in the world economy, suggested respectively by the Generals and by business leaders.

In regard to the first of these proposals, partial autarchy was possible in regard to all those products that can be derived from domestic coal. A certain success could also be expected in the extraction of domestic ore and in the production of artificial fibers. Yet the latter was limited by the small timber supply of Germany. Autarchy in regard to agriculture was neither possible nor desirable. The increase in agricultural production had been offset by a rise in the self-consumption of farmers and by a general increase in the standard of living of city people. A rise in the birth rate and a decline in the number of unemployed would further raise the total demand for agricultural products. Use of additional fertilizers he believed hardly possible because of an early exhaustion of the soil. Increased output could bring only small corrections.¹⁰

¹⁰ In 1937 Hitler made an exception of fats for human consumption, in which he regarded self-sufficiency as possible. This earlier policy, tried and given up in 1938, has been well described by Karl Brandt, *The Fat Plan and its Economic Setting* (Stanford 1938).

Large imports of foodstuffs were already necessary in years of good crops. Scarce supply of foreign money always raised for Germany the specter of starvation in years of poor harvest. A deliberate reduction of food consumption could not be expected to eliminate the difference between the rising demand for, and the relatively stable output of, agricultural produce. Autarchy in the field of foodstuffs was thus neither desirable nor possible.¹¹

What about an increased share for Germany in the world economy? Could Germany succeed in raising her exports and imports to such an extent that the overpopulation would practically disappear? Hitler's answer was in the negative. The difficulties he saw all lay on the side of imports. Many agricultural countries had been industrialized since World War I. These were incapable of supplying foodstuffs and raw materials to all the industrial countries. Hitler also saw a new revival of colonization. The present controllers of the colonies would retain their products for themselves and refuse to sell to Germany on equitable terms of trade. The colonial powers would also refuse to return the German colonies; either they were not willing to lose these possessions or the Dominions of the British would reject such a policy.

Moreover, all countries that built their economies on foreign trade were militarily weak if they did not also control the seaways. Even if imports were possible or available, the decisive handicap of foreign trade was for Germany the insecurity of transports. This insecurity in time of war was a fatal weakness that Hitler was not willing to risk under any condition. Participation in the world economy was thus rejected by Hitler primarily because foreign trade would involve economic dependence on other nations, a dependence that would not allow him to stage a war whenever and wherever that seemed to be advantageous for Nazi Germany.

In rejecting autarchy and extensive world trade, Hitler was leading up to his own goal of a fascist empire. "We live in a period of great empires." Germany, Japan, and Italy were the empires of the future. Solution to the German question lay in securing a

¹¹ International Military Tribunal, *Documents in Evidence*, vol. 25, p. 405.

great living space that would have to supply the missing foodstuffs and raw materials. This agriculturally significant space would have to be on the continent of Europe and be adjacent to the Reich. Naturally, such lands could not be attained peacefully. The attacker would sooner or later meet the owner. His resistance had to be broken if his property were to become available for German settlement. "The question for Germany is where the greatest gain can be realized at lowest cost."¹² Conquest of other nations thus offered to Hitler the only solution to German overpopulation.

Yet the determination to conquer is not enough. How can a nation of insufficient economic resources build up and maintain a victorious army? How can military victory be attained if its precondition is economic superiority? What is the use of conquest if war is such a costly and destructive business that both victor and victim are the losers?

To all these queries Hitler had the same answer: the strategy of lightning warfare. For his strategy Hitler claimed three economic advantages. Blitzkriegs require only a relatively small and brief economic preparation, because they call for economic superiority over the resources of only one specific victim at a given time. Blitzkriegs do not lead to extensive destruction of economic resources, because only the living forces of the enemy need to be destroyed; the brief duration of such a war prevents economic exhaustion of both winner and loser. And Blitzkriegs do not destroy the manhood of the aggressor, because the modern weapons of attack provide the chance of defeating the enemy without significant losses on the battlefields; nor do Blitzkriegs need to lead to a decline in the birth rate at home. These advantages assured the victor that war was a profitable business. War was an effective instrument rather than a handicap for future empire building. The fruits of conquests could thus be fully enjoyed by the Nazis as well as by their domestic and foreign allies.

Hitler regarded the economy as pretty much like an army. His

¹² *Ibid.*, p. 406.

principles of war economics and of lightning warfare resemble each other to a remarkable degree. Thus he favored a flexible, spot-concentrated, short-run war economy which could produce quickly the urgently needed war materials and adjust itself to the changing requirements of war. The planned, carefully controlled, and extensively directed war economy was not to his liking. To be sure, he accepted price-and-wage controls for financial and social reasons, that is, to keep the prices of armaments low and prevent consumer purchases from rising during a war. Repeatedly, however, Hitler became irritated by the fixing of wages and prices, the determining of rations and allotments, when they seemed to interfere with his particular plans for a campaign. The evidence is pretty conclusive that the significance of these direct controls was never fully clear to him.

Most important were the inferences Hitler drew from his war economics regarding the correct level of the economic war effort at home and the replenishing of the war funds from foreign resources. He strongly supported for Germany a rapid increase in production of war materials, a reasonable reduction in the production and consumption of civilian goods, and some consumption of capital. He was opposed to a too large consumption of capital, because that involved the danger of economic exhaustion. Nor did he support a drastically lowered standard of consumption, because privation would undermine the morale of the people as well as the workers' willingness to labor. Especially did he oppose compulsory employment of women, for fear that work in factories would reduce the birth rate and thus the future population. The main reason for drawing a line at the extent of the war effort, before over-exertion, privations, and a declining birth rate were reached, lay in Hitler's conviction that the total economic war effort required by lightning warfare was relatively small, and that a substantial portion of it could be obtained, through conquest, from foreign countries.

In fact, Hitler regarded the expropriation of undesirable races and the exploitation of foreign nations as the main source of the

Nazi real war fund. It was here that he made theoretically his most original, factually his most important and disastrous, contribution to war economics. His principles of expropriation and exploitation were given the form of a directive as early as the first days of November 1937, when he gave General Thomas the instruction that "what one does not have but needs one must conquer."¹³ This rule was incorporated into the revised Four-Year Plan in 1938, and later applied by all other governmental and party agencies. Exploitation became the official policy of the Nazi regime, replacing step by step the program of the General Staff to utilize and mobilize exclusively domestic resources for war. Hitler's lightning warfare was to be fought, whether militarily or economically, at the expense of other nations and for the gain of Nazi Germany.

The measures taken in accordance with Hitler's directive developed into a strategic war economy characterized, as revealed by events from 1938 to 1942, by the following features.

First, economic preparation for war in time of peace should translate the economic potential of Germany into effective military strength. The main aim should be a rapid increase in production of armaments. Emphasis should be placed especially on modern offensive weapons that multiply the striking power of the attacking divisions.

Second, economic efforts should concentrate on preparation for one campaign at a time. Maximize your resources at the most strategic spot was one of Hitler's frequently given directives. He strongly favored a shifting of resources among various uses. The plan of shifting skilled workers to the armed forces during a campaign and returning them to industry afterwards originated with him.

Third, economic requirements of military forces for a campaign can hardly be predicted with any degree of certainty. One must have on hand an adequate stockpile of weapons and munitions,

¹³ Office of United States Chief of Counsel for Prosecution of Axis Criminality, *Nazi Conspiracy and Aggression* (Washington 1947) vol. 4, p. 21.

and also be able to change programs of production on relatively short notice. Thus the need was for a war economy of a high degree of flexibility, so that production could be quickly adjusted to the changing fortunes of a campaign and the opportunities of new wars.

Fourth, preparation and prosecution of a campaign would quite likely lead to a temporary economic crisis. Workers had to be conscripted, transportation of raw materials and foodstuffs had to be postponed, in order that all available means of transportation could be freed for the armed forces. These unfavorable effects could not be avoided. Large-scale reserves of neither war materials nor raw materials could be piled up in such a way as to avoid such crises. The only effective step was to press the offensive fast and hard, in order to terminate the campaign victoriously.

Fifth, campaigns could be undertaken on the basis of a relatively low margin of reserves of military material, or in spite of a danger of bottlenecks. These deficiencies could not and should not be made up through large-scale investments, long-run planning of production, or extensive lowering of consumption at home. The only reasonable policy was to obtain the missing resources from foreign countries.

Sixth, exploitation of foreign countries and expropriation of foreign nationals were thus suggested as the main substitute for relatively low reserves of materials, for various industrial bottlenecks, for long-run economic planning, and for any scarcities resulting either from unforeseen contingencies or from mistakes of commission or omission before or during a campaign.

In the crucial period 1937-39 Hitler's ideas were mainly responsible for a revision of the Four-Year Plan. Yet this modification did not fully destroy the economic policies of the Generals. The "war-economy decree" of September 1939 was predicated on the expectation of a full-fledged war economy. This decree raised the working week to 54 hours, shifted the overtime pay to the government, and imposed a severe reduction of consumption. Within two months, however, most of these restrictive features were can-

celed or modified. In January of 1940 Göring announced to General Thomas that reduction of consumption as well as the concentration of production in large enterprises was unnecessary. The labor saved by these devices was not needed in the war sector, because the production of raw materials under the Four-Year Plan would be postponed. Production of armaments would be increased, but the raw materials and laborers would be obtained from occupied or dominated countries.¹⁴

Thus the Generals' policy—a broader raw-materials base, an extensive decline of consumption, and a shifting of laborers to the largest factories—was played down and then discarded by the Nazis. Exploitation of other countries became the substitute for a full-fledged war economy at home,¹⁵ while the series of Blitzkriegs reduced the requirements for the economic war effort. These two factors explain why the Nazis did not aim at and did not have a full-fledged war economy from 1938 to 1942.

Atomic Stalemate

How significant has been the experiment of exploiting foreign countries? What lessons do the whole debate and the actual shift in Nazi military strategy, in response to a new military technology, suggest for the problem of an atomic war?

The lesson that exploitation of subdued countries is a successful device for increasing the economic resources of a totalitarian state has been thoroughly learned by the Soviet rulers of Russia. Not only did they "live off the land" in their westward campaigns during World War II, but they engaged in stripping the subdued countries of a great proportion of their resources under the name of reparation. Forced labor of prisoners of war became the Russian practice in time of peace. Exploitation became the forerunner of transforming subdued countries into satellite economies, following a pattern of empire-building akin to Hitler's. Stalin and Hitler

¹⁴ *Ibid.*, vol. 7, pp. 588-89.

¹⁵ "Thus four-fifths of the increase in these government purchases over their 1939 level was made possible by the contribution of controlled territories": *The Effects of Strategic Bombing* (cited above, note 2) p. 21.

learned extensively from each other's devices for exploiting other peoples, and the Soviets have been enduring beneficiaries of this policy. Hitler's economics of exploitation of other nations became a part of Stalinism. And exploitation has continued to be practiced in the Soviet sphere by the post-Stalin rulers. Only in the last months, especially since the revolt in Pozan, have some concessions been made; the rate of exploitation has been reduced. It still remains to be seen whether Hitler's principle of exploitation will be clearly abandoned as part of an anti-Stalin policy, and whether the new rulers will succeed in building up a system of intra-empire exchange that will be free of deliberate exploitation.

How do Hitler's lightning strategy and war economy compare with a possible atomic war? Under what conditions could the Soviet regime find it advantageous to impose an atomic holocaust upon the West?

Hitler regarded his Blitzkriegs as superior because of five characteristics: the surprise element of the military attack; the technical superiority of the new weapons; the spot-concentrated striking power of the attacking forces; the defenselessness of the enemy, militarily, politically, and economically; and the profitability of conquest. Are these five features applicable also to atomic warfare?

The element of surprise has increased in significance. Specialists in radar detection of foreign air fleets debate whether leaders of civilian defense will be given a warning of five or fifteen minutes before the actual attack. Naturally, either period is much too short for an effective evacuation of the people from cities, or for moving essential weapons to less vulnerable spots. All strategic targets can be attacked by an enemy force as if they were "sitting ducks."

Similarly, the technical superiority of modern weapons is now much greater than during World War II. Instrument flying has been so perfected that night attacks are much less hazardous. Precision bombing of specific targets was given up in the air flight over Germany. Now it does not even need to be attempted. Any

atomic attack by air will necessarily be area bombing. And this type of attack will now be as effective as was precision bombing in World War II. The same is true of a spot-concentration of the attack, intended to hit the vital centers of the enemy. The difference now is that the vital centers are not regular armies or navies. High-priority targets are now the major cities of civilians, the main networks of transportation, all the airports and the stores of atomic weapons. Thus not only is the list of targets highly selective but their vulnerability has increased, because most of them cover a wider area and have a fixed location. An attacker has a high degree of assurance that a large number of the main targets will be utterly destroyed. The economy of the victim can be so effectively crippled that its power of recuperation is likely to be very low.

There is as yet no effective defense against surprise and spot-concentrated atomic attacks. Fixed location destroys the opportunity of employing movability as a principle of defense. The few weapons developed for interception of attacking air fleets or missiles have as yet—as far as the public knows—not been effectively tested. Effective defense prior to atomic attack may be developed in the future. At the present time we seem to be utterly defenseless against any sneak attack.

Thus the first four characteristics of Hitler's Blitzkrieg have been multiplied in effectiveness. Atomic warfare has increased the advantages of the offensive to such an extent that any defensive strategy has practically lost its chances. In fact, the defense has practically disappeared, because there is little chance of an actual encounter between defensive and offensive forces. There seems little likelihood for defense against atomic attack outside of modern devices of mechanical interception.

The major difference between then and now lies in the last characteristic of Hitler's Blitzkrieg. Atomic warfare is definitely not profitable, either for the attacker or for the attacked. The reasons are obvious. Atomic weapons, modern air fleets and carriers are not the monopoly of any one country. The destruc-

tiveness of atomic weapons is so great that the damage will cripple the main portions of the human and capital resources of both countries involved.

How is the attacker deprived of his loot if the chances of the offensive have been multiplied so effectively? The answer to this question has become public knowledge in the last few years. The power of the offensive has been transformed into the power of retaliation. As soon as, say, a Soviet air fleet crosses the airspace of Alaska, the American air fleet in both the Eastern and the Western hemispheres will engage in a furious campaign of retaliation. The result will be that the destructiveness of atomic warfare has been visited upon both major countries. Atomic warfare cannot fail to suggest to any political leader that modern conquest is not a profitable business. Thus no Soviet leader is likely to accept Hitler's belief that an atomic surprise attack will lay open the economic resources of other nations that can be exploited at will. If a Soviet attack should ever come, it will not be motivated by the expected gains of exploitation but only by the hope that a surprise offensive will utterly destroy the enemy before he can effectively retaliate.

There is of course no opportunity of measuring either opponent's relative power of effective destruction. All the relevant information is kept secret. Even if we knew all relevant data, we still could not measure the destructiveness of each atomic military force in actual warfare, because of all the unforeseen contingencies in actual attacks. In spite of this inability to measure the atomic capacity, it is an indispensable military necessity to compare the potential and actual destructiveness of offensive action as well as of retaliation. Neither the Soviet Union nor the United States will spare any effort to maintain an atomic strength that at least equals that of the other.

The result of these attempts has been an atomic stalemate. The United States is not able to employ her greater stockpile of atomic bombs and other weapons, because the Soviet Union is able to wage an effective campaign of retaliation. A greater atomic strength will

not count as long as the opponent has the power of effective retaliation. It is this retaliatory capacity, rather than the relative potential destructiveness, that will be the crucial and only condition for continued existence of the atomic stalemate in the future. As far as any civilian observer can know, this condition is likely to persist, with the result that we must expect the atomic stalemate to last for a long time.

What is and has been the effect of the atomic stalemate? Strangely enough, the chances of disarmament have not been improved. Traditionally, disarmament means reduction in the available military forces and armaments. Such reduction is predicated on the distinction between offensive and defensive forces. The atomic age no longer knows such a distinction. The difference between offensive and retaliatory forces is not one of size or intent but exclusively one of timing. Whoever strikes first will have the offensive force, while the other power will use its offensive forces for retaliation. No policy of disarmament can be based on such an unknown "time" factor.

The only available alternative is to aim at a "simultaneous" reduction of the atomic striking power of each opponent. Practically, the effectiveness of this alternative has proved to be contingent on effective inspection and supervision of each other's atomic production. Open-sky photography, if it is adopted, bids fair to be of relatively little significance, since it depends on fairly large logistic preparation. The trend of innovation is in the direction of smaller and smaller atomic weapons, the logistics of which seems to be of a declining scale. If this is correct, inspection has to be on the ground, in the factories and hangars. This would be permitted, if at all, only after the need for secrecy, in fear of atomic attack, had completely disappeared. It is only in such a period of secure tranquillity, which depends on a fundamental change in the character of the Soviet regime, that atomic stalemate will be followed by effective atomic disarmament.

Another strange effect of the atomic stalemate is that it has neither reduced the speed nor eliminated the need of an atomic

armament race. Both powers have increased their economic resources devoted to "atomic defense." The race continues for reasons of technology as well as military strategy. The "wave" of atomic innovations has not yet run its course. New opportunities of invention and innovation are still expected. Neither opponent is in a position to be complacent about these prospective innovations. Each will try to be the discoverer, in order to gain the advantages of a head start and of surprise effect, both for military power and for economic potential capacity. Given this technological uncertainty, military strategy must fear continuously for the extent and effectiveness of its retaliatory power. Any invention may be of major military significance. Since the military effect of future innovations cannot be even guessed at, those in charge of "atomic defense" will be inclined to urge the adoption of the only "safe" policy: spend the maximum of available resources on the atomic armament race.

Thus atomic stalemate has failed to bring enduring peace, either for the United States or for the Soviet Union. The continued armament race makes "peace in the future" unlikely. Yet the stalemate has greatly reduced the fear of a sneak attack. The tensions within and between the two countries have declined, and the feeling of immediate military security has increased. The latter result has been of decisive significance for the Soviet Union. Increased security against atomic attack has established the foundation for a new internal and external policy. The new rulers in the Kremlin have utilized this opportunity to the greatest possible extent. Anti-Stalinism has provided the basis for far-reaching new economic and foreign policies. The new foreign policy seems to aim at five major goals: effective isolation of the United States; abolition of NATO; liberation of colonial countries; support of industrialization of the major Asian countries; and a future political and military alliance with the leaders of the neutral bloc, India and Egypt. All these new goals have come into the realm of practical politics because the United States is no longer able to employ her atomic power as an instrument of foreign policy.

Until Mr. Dulles refused to grant American subsidies to Egypt for building Aswan Dam, it seemed as if the neutral countries were the true beneficiaries of the atomic stalemate. It appeared as if these countries were granted an opportunity for peaceful industrialization, as well as for relative independence from both the United States and the Soviet Union. Wooed by both major economic systems, most neutrals hoped to play the larger powers against each other and thereby obtain a greater amount of aid under a declining degree of control. If this trend of competition for the most effective and largest support had been allowed to develop, the Soviet Union would have been under a serious handicap. Huge grants to neutral countries would have reduced the speed of industrialization at home and provoked further revolts in the subdued East European countries. Sooner or later it would have become clear that the economic resources of the Soviet Union are too small for supporting its new over-ambitious foreign policy. Although the situation would have imposed a strain on the American people, the chances for winning the fight for the industrialization and political alliance of the leading neutrals were definitely in favor of the United States.

Refusal of the loan to Egypt, with the subsequent Suez Canal crisis, seems to have gravely threatened the chance of peaceful industrialization of the leading neutral countries. The nationalism of Asian and African countries seems diverted exclusively toward the anti-colonialism fight. The action of Egypt, whatever the ultimate settlement of the Suez dispute, will intensify the revolt against colonial domination. France and Great Britain are likely to engage in a policy of suppression which may very well spread anti-colonial revolts, thereby reviving many of the warlike actions that were tested during World War II.¹⁶ Military operations against liberal movements in Asia or Africa will either break our alliance with Britain and France or, if not, cause the leader-

¹⁶ For a discussion of such actions before and during World War II see Arthur Schweitzer, "Warlike Actions in Our Time," in *Journal of Politics* (November 1945) pp. 343-77.

ship of the alliance to pass over to the colonial powers in Western Europe. In the meantime the Soviet Union will be able to ally herself with the neutral countries, establishing a political alliance in practice but refraining from employing a significant portion of her resources as aid to these countries.

The dispute over the Suez Canal has clarified the alternatives of foreign policy for the United States. Either we have to accept the Soviet challenge of supporting industrialization of the most important neutral but strategically located countries; or we have to support a series of non-atomic wars that will be fought by French and British forces and backed up with American resources. One can only hope that the Suez dispute will be solved in such a way as to stop the threat of a long series of colonial wars, and that the United States will regain the initiative in the struggle as to whether industrialization of leading neutral countries will proceed according to the Soviet model or will be peaceful and independent, supported by a truly disinterested but friendly United States.

A Permanent Defense Sector

In spite of atomic stalemate, there is thus little chance for the United States to reduce the volume of resources devoted to military requirements. Economic efforts will have to be spent for the continued atomic armaments race, and a great increase of the air forces; for maintaining and improving our regular army and navy; for financing the unresolved rivalry among our armed forces; and for military and economic support of other countries.

It is only in regard to the last item that there is some uncertainty, and thus a very limited freedom of choice. American policy can either support the industrialization of strategic neutral countries; or finance the colonial holdings and subsequent wars in the British and French spheres of influence. In the former case, emphasis would be on economic support; such aid might create the conditions for political and economic immunization of the leading neutral countries against communism and Soviet alliances. Military campaigns against native areas would very likely

cement their alliance with the Soviets, and bring no solution of the admittedly critical colonial situation of Great Britain and France.

Whichever policy of support is adopted, the two lines of action promise to be equally expensive. The actual amount to be spent for these requirements is likely to vary over time. Yet substantial reduction of defense expenditures seems improbable. Even squeezing the funds necessary to finance the rivalry among the military will be difficult, because of the civilian support each has been able to build up, and also because of the likelihood of having to maintain atomic and non-atomic military establishments at the same time. There is thus a great chance that our large present defense sector will become an enduring fixture of our economy. National-income projections that assume a significant decline in defense expenditures should be received with skepticism.

If this appraisal of the atomic stalemate and of economic or military rivalry with the Soviet Union is correct, we shall have to accept "big" government as an inevitable feature of our life. The experience of a shrinking governmental sector after World War I will not be repeated. The process of shrinkage immediately after World War II was reversed, first because of Soviet aggression in Korea, second because of the danger of atomic warfare. Atomic technology and economic warfare with the communist regimes are thus the prime causes of big government in time of peace.

The President's proposal for direct defense expenditures and economic or military support of other countries is almost \$40 billion for the fiscal year 1956-57, roughly 10 percent of predicted gross national product for 1956. Yet two general reasons suggest an increase in future public expenditures. Economic penetration by the Soviet Union or a series of colonial wars would force us to increase our economic support of friendly or neutral countries, and the share of capital expenditures is likely to rise if these supports are to have a lasting effect. And the still rising volume of military innovations is likely to raise expenditures for atomic projects, as is illustrated by our recent experience with the long-range-

missile program. The President asked in April 1956 for an increase in his proposed defense appropriations by the amount of \$600 million, and Congress added another \$900 million. It seems probable that at the end of the next five years expenditures for defense and support will be closer to 12 than to the present 10 percent of gross national product.

Expenditures of this magnitude are likely to increase the government's ability to implement the policy of full employment. In the past some expenditures have been allocated to "critical areas" of insufficient employment. An increase of public expenditures in periods of recession would reduce the extent of the fall in private employment. Yet it has to be appreciated that the purpose of defense is not fully compatible with the welfare goal implicit in full employment. Defense and support expenditures, even if they should exhibit the desired cyclical flexibility, would—excluding off-shore contracts—contribute more to employment than to immediate consumption, since the goods produced for the government are intended for future military action.

By the same token, the magnitude of defense and support expenditures will decrease the government's ability to fight off inflationary pressures. The greatest part of these expenditures is regarded as urgent, and is determined more by expected military than by economic requirements. Whenever, in periods of full employment, military expenditures are not postponable, defense policy will become a significant source of inflationary pressures. Although it is not possible to measure the precise inflationary potential, or the specific contribution of military expenditures to past price rises, there can be little doubt that defense and support policies must assume a significant share of responsibility for the rise in industrial prices since 1949. Any theory of inflationary pressures that neglects the contribution of defense policy to the price increase is woefully incomplete.

Thus a third internal economic effect of a permanent defense sector is the likelihood of long-term inflationary tendencies. If they are kept within controllable limits, this pressure should be

sufficient to avoid any significant unemployment. The avoidance of depressions should protect us against periodic declines in the standard of living. While taxation would remain high, gross national product should continue to rise, with the result that a portion of the resources financing defense and foreign supports could be provided by internal expansion of the economy. We should thus be in a position to assume that additional burden, by having a standard of living that would rise somewhat less than the increase in the gross national product.

Of course, there is the so-called "Radford Plan," which promises disarmament by 1960, voluntary withdrawal from all foreign bases, and a self-reliant foreign policy that dispenses with all foreign supports and allies. Yet we should clearly understand the implications of this alternative to foreign supports. The implicit military assumption of this "plan" is that we need only to maintain atomic equality with the Soviet Union; the whole complex of military problems in other areas, especially the explosive colonial situation, is ignored. The economic policy implied in the "plan" seems to be one of economic autarchy within the Western hemisphere. The implicit foreign policy is one of self-selected isolation behind the "walls" of the Atlantic and the Pacific. If we were to adopt this "plan" we would grant the Soviet Union a tremendous gift. Our atomic equality, autarchy, and hemispheric isolation would enable the Russian and Chinese communists to "liberate" Asia, Africa, and West Europe, and thus realize their present policy of penetration into all areas outside the Western hemisphere. Why should it be rumored that leading men of our General Staff favor a policy that is so definitely in the interest of the communist powers?

If we were sitting behind the walls of the Fortress of the Americas, the only line of action would be to establish an atomic-war economy in time of peace. Such economic mobilization would call for large-scale evacuation of our vulnerable cities; a widespread dispersal of our industries; a doubling or tripling of our major networks of transportation; a piling up of food reserves and their

storage in dispersed food caches; a building up of underground shadow factories on a large scale; an extensive system of civilian defense in most parts of the country.¹⁷ The expense of such an undertaking would most likely exceed the cost of World War II plus all defense and support expenditures of our generation.

It is undoubtedly the major purpose of our military and foreign policy to obviate the necessity for such an atomic-war economy. If the power of atomic retaliation keeps pace with that of the offense, atomic war may conceivably come only from communist economic and political penetration. The conviction has been growing that such penetration can be decisively defeated if we adopt the industrialization of the strategic countries in other continents as our new foreign policy. What we seem to need for a decisive victory in the economic rivalry is a rate of industrialization of India that exceeds that of communist China, a rate of economic integration in Europe that permits a productivity increase exceeding that of the Soviet Union. Finally, we should support all necessary measures for revitalizing the agriculture of the Arabian countries in North Africa, and thereby destroy the opportunities for colonial wars. Such huge, bold, and decisive programs alone, I submit, will enable us to avoid any future need for either atomic retaliation or an atomic-war economy.

¹⁷ Preliminary information has been collected by some government agencies. "The Census Bureau of the United States is seeking the precise location of all nonmetropolitan industrial plants employing more than 100 persons . . . A spokesman of the Defense Department explained that about four or five years ago the department had started a tabulation of the location of all large industrial plants, with the aim of estimating vulnerability to air attack. The current survey is aimed at about 8,000 plants not in major industrial areas" (*Christian Science Monitor*, March 24, 1956).

ECONOMIC ASPECTS OF INDUSTRIAL DISPERSAL

BY ALEXANDER MELAMID

SINCE 1945, when Hiroshima was destroyed by atomic bomb, mankind has been afraid of the destructive power of nuclear weapons in modern warfare, and there is now widespread fear that unrestricted warfare would result in the extinction of the human race. But several recent inquiries—outstanding among them the reports of the 1955 meetings of the British Association—have indicated that a complete destruction of man and his societies is extremely unlikely under present technological conditions. A geographical dispersal of economic activities can both reduce the total number of casualties in nuclear warfare and assist significantly in the survival of existing forms of social organization. Strategic dispersal of this nature implies primarily a more uniform spatial distribution of industries, and thus of population within each country. Since the dispersal process should have as little effect as possible on the standard of living, a geographical redistribution of economic activities does not involve the abolition or significant modification of the existing division of labor.

Such plans are now being widely discussed. But what are the economic considerations involved in this geographical approach to a strategic problem? The present paper will attempt to outline briefly some of the more important of these economic aspects of industrial dispersal.

I

The desire to attain a more uniform geographical distribution of economic activities without reducing the standard of living is not a recent phenomenon in the history of mankind. Throughout the history of the United States, demands for more uniform geographical distributions have been voiced. Many aspects of United

States public policy, such as the creation of states to the west of the Appalachian divide, railroad grants, homestead acts, or purchase and employment directives of the federal government can be related to these demands, which have their roots in the fundamental structure of American society. The system of political representation and the widespread opposition to gerrymandering are other aspects of the belief in the same principles. On the level of state activity—which is much more responsive to popular demands—the desire for more uniform geographical distributions has led to the relocation of several state capitals, as well as to the typical location of state capitals away from major centers of population.

Altogether there has been very little serious criticism of this desire to disperse economic activities in the United States in a more uniform pattern. Quite apart from modern strategic considerations, geographical dispersal is aimed at as part of the traditional American development process. Without this implicit belief in the virtues of dispersal, international development projects would probably not have received the public support they have obtained in the United States.

According to the most authoritative work on the ideas of Soviet geographers,¹ a more uniform geographical distribution of economic activities accords also with communist ideology, being considered part of the principle of economic equality. For this reason Alfred Weber's theory of location, which is concerned with the location of industries in a few nodal points, is rejected entirely. Particularly instructive from an ideological point of view is this study's discussion of the abolition in 1926 of the railroad-freight-rate structure inherited from the czarist regime. Instead of the former multiple freight-rate structure favoring European Russia over the area east of the Urals—similar to the differentials in freight rates between railroad territories east and west of the Mississippi River—the Soviet regime introduced flat rates covering the

¹ S. S. Balzak, ed., *Economic Geography of the USSR* (New York 1949), translated from a Russian edition published in 1940.

whole country, in order to encourage the desired more uniform geographical distribution. The actual degree of dispersal resulting from this policy has not been disclosed.

Soviet geographers admit that the dispersal policy was also associated with strategic considerations. Thus the planned growth of economic activity in the Urals and western Siberia is described as the result of an ideological policy coupled with the need to establish industries outside of possible invasion areas. Geographical dispersal of economic activities as a means of defense against nuclear bombs should also accord with communist ideology, and therefore does not imply a departure from existing development patterns.

Among other nations with large territories, Brazil and Australia have evolved ideas encouraging economic dispersal. In neither of these, however, has the resulting policy had the effect of similar ideas in the United States and the Soviet Union. Great Britain and most other comparatively small countries appear to have evolved no significant ideology favoring a dispersal of economic activities. Presumably the absence of such ideas can be correlated with the relatively small size of these countries, their relatively compact distribution of population, and the relics of mercantilist traditions. But in a recent House of Lords debate, acceptance of the naval budget was recommended with the argument that, in the event of nuclear warfare, organized British social structure and modern technological knowledge might survive only aboard battleships widely dispersed in the world's oceans.² Thus even in Great Britain nuclear-defense arguments have been utilized to promote a continuation of existing military traditions of geographical dispersal; emigration to the British Dominions has been similarly encouraged by modern strategic arguments.

This brief discussion shows that for the most important political powers today a policy of geographical dispersal as strategic defense does not imply a departure from existing ideas of economic development or military distribution. In the United States the practical identity of the desires for strategic dispersal and uniform

² See London *Economist*, December 25, 1954, pp. 1061-62.

geographical distribution made the drafting of the necessary legislation easy, and caused no serious political problems. All the relatively under-industrialized states west of the Mississippi and south of the Ohio, which provide more than a majority of senators in Congress, were most eager to cooperate. Support was particularly enthusiastic among inland states, which had been losing population in recent decades, such as Oklahoma and the Dakotas.

United States policy employs several means to further dispersal. Government departments are directed to specific locations according to instructions worked out in cooperation with military experts. Similarly, contractors working entirely on government orders are directed to specific locations by provisions in their contracts. But the main tool for encouraging dispersal is the incentive provided by Accelerated Tax Amortization Certificates, which permit manufacturers of products considered essential in a war economy to write off new plants over a period of five years, provided the plants are located at least ten miles away from target areas. This is substantially shorter than the usual amortization period permitted by the tax laws. Target areas are empirically defined as parts of the United States containing substantial or important industries or communication centers, and having relatively high population densities. For example, the whole south shore of Lake Erie and all of southwestern and central Connecticut are included in target areas. In contrast only small portions of the South and West are so considered.

By June 1955 several thousand Accelerated Tax Amortization Certificates had been issued, involving an investment of over thirty billion dollars. Recipients of these certificates plan and operate their plants as normal commercial enterprises. Dispersal of plants is the primary aim of the policy, and thus wider repercussions on social conditions in the area or on other economic activities are not considered. Nor are agricultural activities affected by the dispersal policy.

From 1928 to 1938 the Soviet Union adhered to a dispersal plan which in its aims was very similar to United States policy today.

New plants were, if possible, located away from existing centers of industrial production, even if this involved, as in the case of the new steel industry of the Urals, transporting both raw materials and finished products over thousands of miles. Transportation, however, turned out to be the bottleneck of the first Russian dispersal programs. Therefore in 1938 the fundamental emphasis of the plan was reformulated: transportation was considered first, and a maximum of regional self-sufficiency was aimed at, rather than simple dispersal resulting in excessive geographical interdependence.

To attain this goal, thirteen large planning regions were devised, each of which was to have a balanced economy requiring a minimum of interregional transportation. Geographical dispersal of industries that did not fit into this pattern was no longer permitted. The new economic regions, like the previous administrative regions of the Gosplan of 1921, did not coincide with the territories of the constituent republics of the Soviet Union; but despite this traditional political deficiency, the new economic regions and regional self-sufficiency have survived, with minor modifications. In 1938 the concept of geographically uniform economic distribution was transformed into the concept of regional uniformity, which apparently did not clash with communist ideology.

The American dispersal program has not encountered the transportation difficulties that the earlier Soviet plans engendered. But since United States industries continue to operate as normal commercial enterprises, even when in receipt of Accelerated Tax Amortization Certificates, escape clauses have had to be established for those industries that cannot operate economically outside of target areas. Out of about two thousand applications for certificates considered during the first half of 1953, over three hundred referred to plants that were to be located in target areas, and of the latter applications only three were rejected; thus Maurice Fulton, an outstanding factory-real-estate consultant, has concluded that "production and cost factors are almost always given precedence over defense considerations," and the existence of the escape

clauses "is encouragement to management to disregard the dispersal factor in plant location."³ The resultant limited dispersal has not satisfied some of the experts, one of whom stated as early as 1951: "Not only has U. S. industry shown itself to be unmindful of the hazard of atomic attack in five post-Hiroshima years but even in the sixth year—the period of intensive mobilization for defense—industry has proceeded to build its factories, offices, and facilities as though the United States were somehow magically immune to atomic bombs."⁴

II

Unfortunately no data are available regarding the present and past degree of dispersal of United States industries, and thus it is difficult to evaluate directly the success or failure of the dispersal policy. But the location of new plants is basically determined by economic criteria, and therefore some indication of future geographical distribution can be derived from observations of recent trends and their determinants in the autonomous location of industries—that is, in the location of industries not directed by government agencies. These observations, derived from the works of economists and geographers,⁵ can suggest whether a wider dispersal of industries in the United States is economically feasible, and thus indirectly permit an evaluation of United States dispersal policy. Comparisons with the Soviet Union and other countries can also be made on this basis.

Economists and geographers who have studied the autonomous

³ Maurice Fulton, "Plant Location—1963," in *Harvard Business Review* (March 1955) p. 49.

⁴ Ralph E. Lapp, "Industrial Dispersion in the United States," in *Bulletin of the Atomic Scientists* (September 1951) p. 256.

⁵ In the following discussion the works of these authors have been considered: Colin Clark, C. H. Coterill, W. G. Cunningham, W. H. Dean, S. R. Dennison, P. S. Florence, Chauncy D. Harris, Richard Hartshorne, E. M. Hoover, Walter Isard, W. A. Lewis, August Loesch, H. H. McCarty, G. E. McLaughlin, Alexander Melamid, Victor Roterus; also publications of the United States Department of Commerce and the British government. A complete bibliography on United States Location Studies has been assembled by Chauncy D. Harris (mimeographed, Department of Geography, University of Chicago, 1951).

location of industries agree that industries have generally tended to locate away from the regions that contain their raw-material resources and to establish themselves in areas of consumption. Raw-material regions, with the exception of major coalfields, tend to be relatively empty of population; on the other hand, areas of consumption, sometimes referred to as market areas, are generally equivalent to those regions of high population density that have been defined as target areas by strategic-dispersal planners. The trend toward plant location in areas of consumption is due to a number of factors.

One such factor is the growth of fully integrated manufacturing processes that produce a large variety of finished or nearly finished products from the original raw material. End products of this nature usually require immediate delivery to consumers, as well as voluminous packaging or stowage, and transportation costs are relatively high. These costs are reduced by locating the plants in areas of consumption. This trend and its causes are most clearly observed in the steel, petroleum, and chemical industries, but have also affected certain lighter industries, such as food-processing.

The increasing intricacy of all industrial processes has made problems of maintenance, involving repair services and the rapid delivery of spare parts, much more important than ever before in determining the location of plants. Despite air-freight and chartered-aircraft services, prompt receipt of essential components is not always possible in out-of-the-way places—a consideration that has been a severe deterrent to industrial development in the prairie states, for example. Manufacturers in such areas have to provide for local repair services and must carry much larger stocks of spare parts than do manufacturers elsewhere, thus adding substantially to their cost of operation. The necessity to finance these services explains why more large firms than small firms have taken advantage of the Accelerated Tax Amortization Certificates. Overall this factor has assisted materially in the trend of industries to locate in areas of consumption.

Moreover, according to Maurice Fulton (as cited above), labor

is rarely available in sufficiently large quantities at a distance of more than ten miles from densely populated areas. In view of the continuous growth of labor requirements of individual plants in most industries, this factor has increasingly induced new factories to locate in areas of consumption. Large-scale builders have attempted a solution of this problem by rapid provision of new housing outside of settled areas, but the creation of these new towns appears to be a far from economic and popular process, and is therefore unlikely to change the observed trends in industrial location. Similarly, management does not like to reside in out-of-the-way places; hence rates of staff turnover are substantial, and the cost of management is higher than in densely settled areas. Modern labor and management problems have thus assisted the general trend of industry to locate in consumption areas.

In the United States this locational trend has been accelerated by the decreasing use of railroad transportation relative to other means of transport. The use of water transportation in particular has increased, and can be expected to grow further, since it now offers economies exceeding 20 percent per ton-mile compared with railroad shipment. It is true that water, like pipeline transportation, can permit the location of plants away from existing centers of population, but the costs of constructing new terminals and other facilities have generally discouraged location of this type away from existing major settlements.

Thus the growing volume of raw-material imports from overseas has led to new plant locations in densely settled areas—in tidewater areas of the east coast, near Philadelphia, for example, or in the San Francisco Bay area, or along similarly crowded Gulf Coast inlets. The growing average size of ships, particularly the so-called super-tankers or super-ore-carriers, has intensified this trend, for there are relatively few harbors, nearly all of them located in important port-town areas, where these vessels can call. Connected with this development is the growing pressure on Congress to provide funds for the deepening of harbors, for example in the Staten Island Kills between New York and New Jersey.

The construction of the St. Lawrence Seaway will permit the delivery of foreign ores to the Great Lakes area in vessels larger than those that can pass through the existing canals.

The potentialities of truck transportation have assisted the trend of industries to locate in densely settled areas, since this type of transportation is economical for short distances. It remains relatively economical, however, for distances up to about three hundred miles (generally regarded as the overnight trucking range), and to some degree this fact has assisted industrial dispersal where other factors have made it economically attractive.

The available literature mentions relatively few industries that have tended or continued to locate outside the areas of consumption. These industries generally process raw materials which cannot be shipped economically over great distances, and whose end-product is relatively cheaply transportable. Outstanding among such industries are processors of natural-gas components, as their raw materials have to be removed from the gas before the latter can be dispatched by pipeline to distant consumers. Plants processing these components—primarily into raw materials for synthetic rubbers, solvents, and plastics—have to locate in natural-gas-producing regions, even if these are situated far away from centers of consumption. In terms of value these plants probably constitute a sizable proportion of the industries that have located outside of target areas in recent years; their total employment, however, does not exceed a few thousand workers. Nonferrous-ore-producing plants, such as zinc smelters, which also have to locate in areas of raw-material production, similarly account for high capital investments and relatively insignificant employment. Industries processing highly perishable agricultural raw materials, such as sugar beet, generally exhibit the same features.

The southward trend in the location of some American industries is sometimes cited as an example of industrial dispersal. McLaughlin and others have shown that this trend has been caused by the central location of the Mid-South with respect to deliveries of relatively light-weight valuable products to estab-

lished consumption areas in the Northeast, and to the growing consumption areas in the rest of the United States, particularly in the South itself. Because of the nature of these products, location in actual areas of consumption is not necessary. Most such plants require relatively large quantities of labor, however, and thus the resultant industrial development has taken place primarily in or near established centers of population, although not all of these are classified as target areas. The recent expansion of industries in Florida and the Gulf coast can be correlated with the growth of urban population there, which has already resulted in the creation of new target areas, and also with the increasing significance of water transportation. It should be noted that many of these plants are not "essential" for war-production purposes. Generally throughout the Southeast only a limited trend toward an autonomous dispersal of essential industries can be observed.

Contrary to the opinions of some of the earlier geographers, climatic factors appear to have hardly any effect on the location of United States industries, for construction and maintenance costs differ relatively little between the various climatic zones of this country. Climatic advantages have attracted plants for the outdoor assembly of aircraft to the Southwest and California, but in view of the labor requirements of this industry, location outside of densely settled areas is extremely unlikely without government assistance.

Atomic energy is sometimes mentioned as a factor that may induce a wider dispersal of industries. The available data indicate, however, that utilization of atomic energy is economical only if large amounts are consumed within a relatively small area. Therefore the economic utilization of atomic energy appears to be limited at present, and probably for some years to come, to densely populated and highly industrialized areas like New York City and its vicinity and other large metropolitan centers. This utilization pattern also explains why the civilian use of atomic energy is much more advanced in densely populated Western Europe than in the United States.

In summary, the observed trends in autonomous industrial location indicate that although a continuation of the limited dispersal of light industries into the South can be expected, the economic structure of United States industries effectively deters any large-scale dispersal of plants away from target areas. On the contrary, the observations indicate that American industrial capacity will continue to aggregate in areas of consumption, and thus in target areas. The few exceptions have only a limited effect on total population distributions. It has been estimated, for example, that in the essential petrochemical plants processing natural-gas components in the major gas fields of the Southwest, total additional employment can be expected to increase by only about two thousand men between 1955 and 1975.⁶ Even an equalization in the freight-rate structure of American railroads, similar to the Soviet changes in 1926, would probably not result in any significant changes in the location of American industries, and therefore has not been pressed too vigorously. Other countries—for example Canada, Great Britain, West Germany, Turkey, Israel, South Africa, and Australia—exhibit similar trends in the location of industries.

In these circumstances it appears likely that little has been accomplished by the present dispersal program in the United States, despite its historical background, or by such programs in other economically similarly organized countries. As far as the available data permit observations, it appears that dispersal beyond the vicinity of target areas has been generally successful only in the case of plants that operate entirely or predominantly on direct military contracts, for example aircraft assembly. But plants that would locate autonomously outside of target areas have probably done so to a greater degree with the help of Accelerated Tax Amortization Certificates than they would have without that inducement.

The continuing trend of United States industries to locate in areas of consumption has, however, a possible paradoxical aspect.

⁶ Walter Isard and Eugene W. Schooler, *Location Factors in the Petrochemical Industry*, United States Department of Commerce (Washington 1955).

The United States contains numerous geographically separate regions of dense population concentrations, and it is frequently found that plants employing the same manufacturing process are located in each or many of these regions. Thus similar plants may be located in the Northeast, the Great Lakes area, the South, the upper Mississippi valley, the Texas gulf coast, and California. In this way a regional dispersal of industries has evolved which in many ways resembles the Soviet aim of planned regional distribution. Because of insufficient data no actual comparison can be made, but it appears likely that these circumstances make the United States and the Soviet Union equally vulnerable, industrially, in a nuclear conflict—a consideration that may possibly act as an effective deterrent to aggression.

THE RUSSIAN BEAR WALKS AGAIN

BY ALVIN JOHNSON

NOTHING substantial has changed in Russia, say our diplomatic journalists. Stalin has gone to his reward, and it has seemed good to his associates to smear his memory with blood and tar. But the new Russian rulers say they are for world communism, as ardently as Stalin ever was. They repudiate the cult of indispensable personalities, but as a group hold as tight a rein on the masses as Stalin ever held. Marxian ideology is as infallible for them. Stalin occasionally admitted that peaceful coexistence of communist and capitalist nations was possible. His successors have developed a new wrinkle. Nations can coexist in peace, but ideologies can't. Well, it is the nations that raise armies and fight with guns—in the future with atomic weapons. Ideologies can organize conspiracies, but communist conspiracies seem not to retain the zest they exhibited in the time of Hitler.

And while we are on the subject of changelessness, how about ourselves? Have we given up our faith in world democracy? No more than the Russians have given up their faith in world communism. To promote their faith the Russians have scattered propagandists through the world. We are doing a good deal of democratic propaganda, ourselves. If the Russians secretly subsidize subversive parties we openly subsidize conservative governments, even if, like Saudi Arabia, they are mediaeval despotisms, indeed, primordial slave states.

There is small profit in studying the pronouncements of political leaders. Whatever goes on in their minds, their words of today must be fairly consistent with their words of yesterday. If we really seek to understand the international situation, ever fluctuating, we must look to interests, particularly interests that have become imbedded in tradition. Thus the British interest in Suez is the interest in her "life line." American interest in Central

and South America is imbedded in our conception of national defense.

We need not imagine that the traditional interests of czarist Russia were entirely liquidated by the revolution. Czarist Russia never gave up the dream of gaining a gateway to the warm seas. Blocked by England and France from the Dardanelles and the Mediterranean, Russia worked persistently to surmount the barriers to the Persian Gulf. Is the Persian Gulf nothing to the Moscow of today?

In its early years the all-absorbing interest of the Soviet republic was to suppress counter-revolution at home and ward off intervention from abroad. To build up communist centers in Western Europe and America, to mobilize by propaganda the popular hatred of war, were policies of defense. A worldwide communist revolution would have been welcomed by Lenin and his followers, but Lenin was too realistic to count on any such grandiose event. It was enough if popular opinion could be influenced against intervention.

When the peril of Franco-British intervention disappeared, a new peril emerged. Germany, beaten out of the spoils of the Treaty of Brest-Litovsk, humiliated before France and even before Poland, enslaved to an indemnity that wrecked her economy, was yet strong in her fighting spirit. She could not turn eastward so long as Poland was against her, and Poland held too much territory that Germany regarded as hers to be won as an ally. Yet mere national animosities cool; national interests keep. What if Poland and Germany had joined, to divide the Ukraine between them? England and France would have looked on with approval, the United States with joy. How could Russia have hoped, or even dreamed, that Germany would fall under a leader mad enough to challenge both East and West? Hitler was Soviet Russia's salvation.

Down to the outbreak of the Second World War the essentials of Soviet policy remained defensive. Build up the mightiest possible army; build up heavy industry and the guns and tanks,

the high explosives, the airplanes and submarines without which Russia would be as helpless as in the days when the czar's troops, out of ammunition, had to face German troops with a superabundance of the instruments and materials of battle. No avoidable application of productive resources to consumer goods was permitted. It was officially reported that 50 percent of the national income went for army maintenance and industrial capital. The Russian masses were used to austerity from of old. They accepted their deprivation: better rags and short rations than facing barehanded an enemy equipped with the most modern arms.

And in the meantime, by intrigue and propaganda, they sought to build communist parties in every land. Poland, liberated but under a dictatorship incompetent to cope with the ghastly postwar poverty, offered a good soil for communist tillage. So did Germany, wracked by an incredible inflation. France, though victorious, had lost so much blood that the thought of war was a horror to her. Italy, also nominally victorious, was starving, and communism spread like a prairie fire. So great a city as Milan, many lesser cities, went communist. In England the inability of the Labour party to achieve socialism caused a considerable fraction of the socialists to go communist. Even in America, the crisis and depression of 1929 opened the door to communist propaganda.

What wonder if Stalin, an uneducated man blinded by Marxism to the stubborn realities of the system of free enterprise, dreamed that the communist world revolution was at hand? The seizure of power in Italy by Mussolini, in Spain by Franco, in Germany by Hitler should have exorcized the dream and set Russia to arming more desperately. Apparently it did not. Stalin wasted resources in the unnecessary and futile war on Finland, and counted on gaining time through the Machiavellian alliance with Hitler for the dismemberment of Poland.

Since Stalin's death one fatal defect after another in his despotic policy has been advertised to the world by his successors. Some of those defects may be fictitious. But it cannot be doubted that

Stalin failed to comprehend, or carry through, the shrewder defensive policies of Lenin. The necessity of industrializing Russia was Lenin's concept, and being enough of an economist to appreciate the conditions of modern industry, Lenin sought persistently for men of ability to head the industrial enterprises—"trusts." There appears to be evidence that Stalin subordinated ability to sycophantic loyalty to himself. Modern industry requires an educated and trained working class. Under Stalin selection of students for ability gave way to selection on the basis of the party position of the parent. Lenin appreciated the fact that with so enormously long a frontier and no natural barriers, control of the army at the front could not be rigorously centralized. The general on any particular sector needed a free hand. Stalin's view was that the generals and their commands were pawns to be moved about by his sole judgment.

What saved Stalin was the incredible arrogance and stupidity of Hitler, obsessed with the conviction that he was equal to the whole world. He could have annexed Austria and made an alliance with Hungary without suffering any penalty beyond diplomatic notes from France and England. He could have "rectified" the frontier with Czechoslovakia, to win a substantial part of the Germans of the Sudetenland. He could have joined with Poland to divide the Ukraine, and have got back much of Silesia in compensation for Poland's Russian gains. But Hitler chose a policy that brought in Russia, France, and England, and finally the United States.

Germany was crushed, occupied by the victors. And Stalin set out for victory over the other victors. He won a communist Poland, Czechoslovakia, Hungary, Yugoslavia, Albania, Rumania, Bulgaria, and even made communist an occupied East Germany.

Was not Stalin on the way to win the world communist revolution?

There was more contiguous territory that Stalin believed could be won. He had a formula for winning it. Soften a contiguous state by communist propaganda and organization. Arm the com-

munists and then, with a wild hurrah, sweep through the inert masses to seize the seats of power. Stalin tried his formula on Greece, Turkey, Iran, South Korea. He was checkmated by the United States, but communism succeeded in China.

Times have changed. The new rulers of Russia have been freed from the fears that harassed Lenin and Stalin down to the victory over Germany in the Second World War. Russian heavy industry has reached a stage in which it can outbuild all Europe in military equipment. Russia has all the trained soldiers she could use in a world war. She has more airplanes, submarines, tanks than all Western Europe. She has conquered the atom, developed the guided missile, and could lay waste any European enemy. She hopes to outmatch the United States. In this she may not succeed; but the United States is far away and too shrewd to enter on a game of mutual destruction.

So long as Russia appeared to be in deadly peril an absolute dictator was necessary. Stalin's associates knew the defects of his policy and administration. They feared his technique of maintaining his power, the technique of despots from immemorial time: the slicing off of any head rising toward the despot's level. With the Soviet state in peril his associates could not rise against him. Victory over Germany changed the position, and Stalin was in luck with his timely death.

Russia has her own great power and all central Europe for satellites. What do the satellites amount to, in the calculation of Russian strength? Poland, communist but stagnant, hating the Russians but dependent on them for defense against a future German attempt to retake lands east of the Oder-Neisse line. Russia has capital to invest in India, Egypt, and the islands of the sea. Does she invest capital in Poland? No. Russia can send forty thousand engineers and industrial organizers to China. She sends none to Poland and East Germany. Those lands, if developed, might be embarrassing. Suppose they remain communist: there is no communist ethical rule that requires Poles to love Russians and East Germans, and vice-versa. Czechoslo-

vakia can be counted on by Russia, for through ages of oppression the Czechs have looked to Russia, and must do so the more now in view of the German feeling about the millions of Germans expelled from the Sudetenland. Hungary sits jealously by the side of Yugoslavia, which means to go it alone, and Bulgaria eyes Yugoslavia with ancient bitterness. Rumania remains a backward state, with no native enterprise and no Russian engineers and technologists to give her a lift.

Russia loves her satellites, platonically. But they are no part of the great dream now again stirring in Russian minds. Russia on top of the Eurasian continent, dominant from the Arctic to the warm seas. All Asia under Russia, and the islands of the sea. All Africa, and the Atlantic powers confined to the Atlantic.

As of old, England is the barrier to the realization of the Russian dream. No longer England alone, but NATO. NATO is NATO with West Germany, armed, in the organization. Without Germany NATO is only a loose Franco-British alliance with the United States and Canada, far away, and Australia, farther.

Germany can have unification, with Russian consent, if she will withdraw from NATO and refrain from arming herself. And then, what becomes of England's position in the Middle East? Time was when India was the key to Britain's power. Now it is the Persian Gulf, with two-thirds of the oil of the world, oil, the vital necessity of England's industry and standard of living. If Russia could cap the oil wells of the Persian Gulf she would finish England.

In the days when the sun never set on England's flag the Bear that Walks Like a Man walked in India, Burma, and Persia, intriguing with discontent, insinuating suspicion into the relations between friend and friend. As readers of Kipling know—Kipling, the most articulate and most authentic exponent of British policy—the British operated a mighty counter-espionage that strewed cacti in the path of the Bear. Today the British sit calmly on their forgotten vested rights, and the Bear walks where he will. He walks in Pakistan and India, in Iran and Iraq,

in Syria and Jordan and Lebanon, in Saudi Arabia and Egypt, in Algiers and Morocco, in Kenya and Rhodesia and the Gold Coast and Nigeria. What the Russian propagandists have to say varies with the place. In Damascus and Baghdad it is oil; in Beirut and Jordan it is anti-Israel; in Egypt it is Pan-Islam; in Algiers and Morocco, anti-colonialism; in Nigeria and the Gold Coast, anti-white racism; in Kenya, anti-alien land monopoly. Where these Russian orators go they appeal to the heart's desire, the best or the worst.

And the Voice of America is a small faint ringing in the ears.

Do the Russians really believe that they can win to communism Arabian Nights despots like Nasser Bey and Ibn Saud? If such a suggestion were heard the roar of the Russian laughter would echo from Arctic to Antarctic. The Russians know, to set up a communist society is an enormous job. They have worked at it for fifty years, with the vast ability of Russians, one of the most talented of races, at their command. They have passed the beginnings of a viable communist organization, but only the beginnings. What could be expected of Arabs bowing to Mecca and otherwise playing the game of life as if it were but for a day and not a noble one? What could be expected of half-naked Africans? Communism according to Karl Marx? Certainly no; but anti-British, anti-French, for sure.

In the Arab dominions, around the Persian Gulf, are two-thirds of the accessible oil resources of the world. To the present, those great resources are being utilized by England and the United States. Why, Russia demands. Why let England live on the Persian Gulf? England, which has thwarted the Russian dream through decades that run into centuries.

The Russian dream, not czarist, not communist, but Russian. Russia on top of the Asiatic world, reaching to the islands of the sea, to Africa down to the Cape of Good Hope. Russia on top of the world, reaching south to the Indian Ocean, expelling the British and what else there may be of the West. Russia, an Eastern power, standing up in her might for the East.

It is a grandiose dream, this dream of Russia lording it over all the strange politics of the mighty continent of Asia and her appendage Africa.

The Bear that Walks Like a Man walks softly, steadily, with a clear eye to objectives. He walks unnoticed by us, for we are obsessed by obsolete conceptions of communist-capitalist conflict. Against the Goliath of Russian ambitions we set up our small David, Dulles, with a sling of words. We continue to arm the Arab countries ostensibly against Russia, whose only design is to use the Arab countries against us. Tanks to Saudi Arabia, for what? To meet Russian attack? Does Russia mean to waste resources in the Arabian desert? No. To attack British Aden, Hadramaut, Oman, Kuwait.

The advance of Russia toward dominance of all Asia and Africa is proceeding apace. What are we doing about it? Nothing? No, not nothing, but worse.

PRUSSIA AND THE WEIMAR REPUBLIC

BY HAJO HOLBORN

THE Weimar Republic is not held in very high esteem in Germany or abroad. The sentiments it awakens range from friendly pity to spiteful contempt, but they hardly ever reflect an attitude of sympathetic appreciation. As a period of history the years between 1919 and 1933 are under the shadow of the collapse that followed the First World War and the catastrophe of the Hitler regime. Since the course of world history seems to have irrefutably proved the weakness of the democratic institutions created in Germany in 1919, there seems to be no particular reason to pay much attention now to this transitional period, except perhaps to show how by sins of omission or commission it paved the way for Hitler. Actually, however, in spite of its disastrous defeat, the Weimar Republic cannot be written off as an empty or futile chapter of German history.

The first German republic was not—as its opponents asserted—a foreign importation made possible by Germany's military defeat, but had roots in older German history at least back to 1848. Therefore present-day German democracy is linked up with the Weimar Republic more closely than is usually admitted. I do not overlook the differences between the Bonn and Weimar Republics, nor would I hesitate to say that the indigenous strength of German democracy appears to me greater today than thirty years ago. But if this is correct it is at least partly explained by certain achievements of the Weimar Republic which Bonn inherited. It is unnecessary to mention that many political leaders of the Bonn Republic, beginning with Theodor Heuss and Konrad Adenauer, formed their political ideals in the years between 1919 and 1932, and that the Bonn and Weimar constitutions are more than superficially related.

Some people will see in such reassertion of traditions only a reflection of the relatively strong similarity of the external conditions and the underlying social patterns of German life. The statesmen of the Weimar period were not, however, mere representatives of a tradition; by their active courage and practical deeds they contributed to the world of German political experience.

If in the following pages I select as an outstanding instance of this leadership the head of the Prussian government during most of the Weimar period, the late Otto Braun, I am not just indulging in memories of bygone days, but am endeavoring to find a symbol of a period that is not only an integral part of past German history but also relevant to many of our present-day problems. It may be said that Braun, next to Ebert and Stresemann, had the greatest personal influence in fashioning the democratic life of the Weimar era. The tasks with which he dealt were in a way of a more limited political scope than those Ebert and Stresemann wrestled with. On the other hand, his political leadership extended over the whole period from 1918 to 1932.

I

Otto Braun demonstrated that the absolutistic and militaristic Prussia could be transformed into an agent of democratic policy without a revolution if the anti-authoritarian forces could be persuaded by word and action to compromise their political aims. He proved that it was not Prussia as such, or the majority of the Prussian people, that was, so to speak, congenitally militaristic and authoritarian, but that the peculiar monarchical system had produced the aggressive character of the old Prussia.

Into the modern age Prussia had maintained much of the structure that Frederick William I and Frederick the Great had erected. It went through great changes in the period of reform between 1807 and 1819, and again in the period between 1848 and 1878. But its predominantly absolutistic form of government

remained essentially unaffected by the introduction of extensive civil rights and the semblance of representative institutions. Even after the founding of the Second Empire, Prussia must be described as a lightly-veiled class-state built chiefly on the Junker class and the high bourgeoisie and ruled by a monarchical and bureaucratic regime whose supremacy was guaranteed by the army. It was this Prussian system which was extended over Germany, with little modification, in Bismarck's Empire. The Bismarckian constitution of 1867-71 was a device to find a balance between the conservative Prussian monarchy and the more liberal states of southern Germany, but the fulcrum of the balance rested in Prussia. With the Prussian king as German emperor, with complete Prussian control over military and foreign affairs, the federal system in Germany was rigidly limited by Prussian predominance, or, as the German constitutional lawyers called it, the Prussian hegemony.

Against this pseudo-constitutional Prussian-German system the working-class movement rose in bitter opposition. The system was viewed with suspicion also by large groups of the Catholic population. The conflict between the authoritarian government and the lower classes was not solved in the forty years of the Second Empire, or in the four years of World War I, when all groups in Germany proved that the ruling classes had no monopoly on patriotism or on political wisdom. The failure of the monarchical government to reform German constitutional life and make the oppositional elements full citizens of the nation necessarily turned the military defeat of 1918 into a political revolution as well.

Ever since German liberals began to think of a German unification that would exclude Austria, that is, since the 1830s, Prussia had posed a problem apart from its reactionary political character. Prussia was simply too big to be fitted into a federal system. The idea of the dissolution of Prussia into its various provinces was first seriously debated during the revolution of 1848-49. The revolution of 1918 seemed finally to open the way

for the division of Prussia. The democrat Hugo Preuss, who had been made secretary of interior after the revolution in order to prepare a draft constitution to be presented to the Constituent Assembly, advocated the abolition of a central Prussian government and the formation of a number of North-German states, composed of the Prussian provinces and the small states. But while Preuss succeeded in his attempts to strengthen the federal German government and subordinate the *Länder* governments to it, he was defeated in his projected reform of the regional units of Germany.

In the first days of the revolution the possibility had existed to prohibit the formation of a Prussian government, and the question was actually discussed whether the council of people's commissars, which assumed the functions of a German government, should assume those of the Prussian government as well. But Ebert felt that the council would be overburdened with problems of first political magnitude without adding the Prussian load. He was also fully aware of the strong particularist sentiment in southern Germany at that moment. The radical socialist government under Kurt Eisner, which had come to power in Bavaria through the November revolution, exploited to the full the resentment against Prussian hegemony and national centralism. The council of people's commissars, which had no real democratic mandate, could hope to assert its authority more easily if it avoided wearing a Prussian hat in addition to its German hat.

It can also be read in the so-far unpublished minutes of the council that Ebert foresaw the strong opposition that the Preuss plan for the regional reorganization of Germany would arouse. The project was practically buried by the Weimar National Assembly. It seemed unwise to tamper with the traditional administrative structure of Germany at a moment when the Rhinelands were occupied, the German-Polish frontiers were being fought over, and plebiscites were about to be held in Upper Silesia, East Prussia, and North Schleswig.

In Prussia itself, which had a government of its own after

November 12, 1918, and after January 1919 a democratically elected assembly, no strong signs could be found that the provinces wished to become states. A move in this direction in the early days of the revolution by the mayor of Cologne, Dr. Adenauer, found only a weak echo. In Hanover the particularist movement was somewhat more persistent, but represented at all times only a small minority. In all other provinces not even this much of a popular expression occurred.

The upshot of all these constitutional debates was a peculiar compromise, which was thoroughly illogical and not too practical but proved in the end rather fortunate. The Prussian state was preserved, though the Weimar constitution made provision for the possible secession of individual provinces through democratic initiative and plebiscite. But the Weimar constitution took away from all the states so much legislative and executive power that the new centralization under the federal government would in itself have made the predominance of a Prussian government impossible. Military and foreign affairs in particular were definitely transferred to federal authority, which became also the complete master of German economic and financial policies. Moreover, the organ of the states within the federal government, the federal council, which had been the chief organ of federal legislation and the main channel of Prussian influence in the Bismarckian Empire, was confined to largely advisory functions. Yet to the makers of the constitution this still was not enough to lay the ghost of Prussian hegemony. Therefore within the new federal council the Prussian free state received only two-fifths of the votes, and half of these were assigned to the individual Prussian provinces.

Thus the Prussian eagle not only had its wings drastically clipped but also lost many of its feathers. Still, Prussia emerged as a powerful force in the Weimar Republic. The administration of two-thirds of Germany was bound to remain of the greatest political significance, irrespective of the exact nature of the constitutional provisions for Prussian participation in the

formulation of German policies. Actually the federal council became a much more important organ of the German government than the Weimar constitution had envisaged. The administration of police, justice, and education, as well as of the very large state properties in domains, forests, mines, and public works, created a strong power position, provided the Prussian government was capable of developing a unified political will.

If something like a Prussian, as distinct from German, patriotism had existed among the majority of the people, the Prussian government might have insisted after 1920 on the restoration of some Prussian rights. But the government of Otto Braun eschewed such policies altogether. On the contrary, it conceived of its function as one resisting any type of state-rights pressure. In the attempts undertaken in the later twenties to cure the organizational weaknesses of the Republic—known as the *Reichsreform* movement—the Prussian government went so far as to offer its own demise.

The Prussian government under Braun used its strength and its influence on federal affairs to make the new Republic more secure and to realize the concrete democratic ideals of the Weimar constitution. By making the fundamental law of the Empire the basis of its own policy, Prussia acquired once more an important historic mission. Baden, Hesse, and Hamburg followed a similar course, but Prussia's role in the defense and implementation of German democracy was greater, not only on account of its size but also because it neutralized the strongest reactionary elements within Germany.

What happened in Prussia after 1919 would not have been possible without the Catholic Center party. Traditionally the chief supporter of state rights, the Center party accepted the large expansion of the authority of the federal government through the Weimar constitution. Traditionally critical of a Prussian government, the party, after 1919, devoted itself earnestly to the problems of the central Prussian government. The Bismarckian Empire had tended to confine the political movement of German

Catholicism to its provincial strongholds, and the Center party had shown much inclination to shut itself up in its towers. The active and outgoing participation of the Center party in national affairs which the Weimar Republic brought about was one of the fortunate pages of recent German history. The coalition in which the Center party participated made it possible to make up for the weakness of the liberal forces in the German bourgeoisie, which were particularly feeble in East Germany.

But there is no doubt that the formation of a Prussian government in 1919, through a coalition of the Social Democratic and Center parties, augmented by whatever liberal elements were willing to cooperate, was instigated by the Social Democratic party, and that government would not have lasted from 1920 to 1932 had it not been for the statesmanship of Otto Braun. Prussia was not Germany, and therefore the Prussian government had only a limited influence on many fundamental political decisions taken by German governments in which the Social Democrats were not represented. The latter did not even dominate the Prussian government, because they had to make concessions of a rather stringent nature to their coalition partners. But Braun was able to prove that active participation in government could yield practical results for the benefit of the working class. His government was not merely tolerated by the majority of the German workers, but gained their faithful support. Not the revolution of 1918-19 but the twelve-year regime in Prussia under Braun remolded the Social Democratic movement into the party that it is essentially today.

II

The Social Democratic movement in Germany had come into being during the industrial revolution in the 1860s, gaining strength in the 1870s, as the protest of the workers against aristocratic privileges and the social callousness of the new industrial class. The attempted suppression of the socialist movement in the 1880s hardened the bitter conflict without stopping the rapid

growth of the movement. By 1903 the Social Democratic movement comprised one-third of all German voters.

Historically speaking, European socialism was the answer to social systems that had grown out of a feudal past. The new bourgeoisie built up its status as a wielder of control, and closed itself off against the lower classes, exactly as the nobility had done in the past against the commoners. Property became the key to political power, social privilege, education, and personal dignity. This explains why the demand for the nationalization of the means of production had such a powerful appeal to the early believers in socialism. But the rising revolutionary radicalism, expressed in the rather rigid, and largely Marxist, Erfurt program of the Social Democratic party, had as its most immediate aim the isolation of the movement from the bourgeoisie. As such a movement it formed the character of the Social Democratic leaders and followers in many important respects.

What Marxism, pure or diluted, taught the stepchildren of the nation was the confidence that they marched in the vanguard of history. This was a message that gave meaning to their daily struggles. The Social Democratic program infused in leaders and followers the faith that, in spite of temporary delays and setbacks, victory would be theirs. Obviously victory would be the victory of the working class as a whole, and its unity was a prerequisite of ultimate success. In cultivating this unity the individual could already enjoy some of the humane pleasures of the final stage of history, with the accidental outward differences of men submerged in full equality, and personal relations turned into fraternal comradeship. The preparation for a new civilization could begin through common self-education.

The philosophy of history, the social and individual ethics, that characterized the Social Democratic party before World War I stamped the thought and habits of the German worker very profoundly, but also the personality of the party's leaders. Otto Braun showed their imprint most clearly. His quiet but firm conviction that democracy and socialism would eventually be

fully realized, his loyalty to the working people, his belief in education as a means of promoting the freedom of the individual and of the masses—all these were ideals that Braun acquired in the Social Democratic movement. He represented it well in his great personal modesty and the simplicity of his style of life, although he possessed a natural dignity that commanded respect. In his opinion the individual had to seek fulfillment in service to the group. Kant's categorical imperative—"Act in such a way that the maxim of your will could at all times be taken as the valid principle of a general legislation"—found in the unpretending Prussian, Otto Braun, a new application.

When Braun first reached a certain prominence in the party—he became a member of its national executive committee in 1911—the party had gone through considerable changes. His own career was characteristic of some of the novel trends. When hardly out of his teens he was a member of a group of youngsters, the so-called *Berliner Jungen*, who agitated against the "counter-revolutionary" Erfurt party program of 1891. At the end of the 1890s he returned to Königsberg, where he edited the Social Democratic newspaper and campaigned for the party. Although the party on the whole neglected the peasants and the problems of agriculture, Braun scored notable successes in organizing the farm workers of the province. The monarchical regime made life most unpleasant for him. Hugo Haase, one of the chairmen of the German Social Democratic party and after the split of the party the leader of the Independent Socialists, was then a practicing lawyer in Königsberg. He alone represented Braun in sixty-four court trials in seventeen years. But in spite of all chicaneries of the government, Braun, like many other members of the German Social Democratic party in those years, went through a development toward a strong faith in democracy.

Soon after the oppressive anti-socialist law was lifted, a steady trend from revolutionist to reformist tactics and ideas gathered strength. The growth of the party created a home, or at least a roof, for cultivating the aspirations of German workers. More

important still was the rise of trade unionism and its direct and indirect influence on the policies of the party. The German working class certainly did not receive its just share in the growing national income, but its lot was improved by the social legislation enacted after the 1880s, and it participated to some extent in the relative prosperity of the two decades before 1914. By 1911 the German workers had much more to lose than their chains. Not a classless society but progress toward an egalitarian society received the greatest emphasis. In many respects these German socialists must be considered true heirs of the German democrats of 1848.

From this it becomes understandable why the Social Democratic party joined in the German war effort of 1914, and why the majority of the party adhered to this course to the end of the war. And in the light of the party's history it cannot appear surprising that its unity broke under the effects of the war, and that not even during the revolution was unity restored, although the break in 1917 occurred largely over issues different from those that had to be faced in 1918-20. The split in the party was itself one of the chief reasons for the failure of the German socialists to gain a majority within German democracy or to win an unassailable position for it.

But behind the division lay the divergence between political theory and actual practice. This would never have been quite so sharp if democratic socialism had not come to life in the hostile atmosphere of an authoritarian state, and many other shortcomings of the Social Democratic party can be attributed to this fact. In the decisive years before World War I the party did not produce leaders of eminence who could have hammered out a political program that would have excluded sheer opportunism and, at the other extreme, utopian dogmatism. The party leaders—and this applies to both wings of the Social Democratic party—were not adequately prepared for a wide range of political realities, particularly the problems of armed power and foreign affairs.

Otto Braun did not play a leading role in the great decisions of the German revolution. His place was on the side of the democratic reformists, at least from 1908 on, and characteristically, as Prussian minister of agriculture, he centered all his efforts on the restoration of food production and the mastery of administrative problems of state. The time of his important decisions came after 1920, when the Social Democratic party had already been forced out of the federal government.

If the majority socialists in Prussia had then withdrawn from the Prussian government, the Weimar Republic, and also the Social Democratic party, would have had a drastically different history. It would have meant the restoration of the political fronts along class lines as they had existed prior to 1914. The old ruling forces in the country, together with the army and the bureaucracy, would have considered such a flight of the Social Democrats a complete victory, which they would not have hesitated to exploit. On the other hand, if the Social Democrats had gone into total opposition, they would have become increasingly dependent on the left-wing socialists and communists. Braun's endeavor to form a Prussian government of the Weimar coalition, and his skill in making it work, blocked such a development. He saved the democratic and reformist character of the Social Democratic movement in Germany.

The policy of the leaders of the majority socialists has often been described as an act of treason perpetrated by a group of bosses on the faithful revolutionary masses. It should not be denied that the majority socialists failed to make use of some of their opportunities for advancing socialist aims. One can even go further and deplore certain gratuitous demonstrations of national patriotism. The fatuous attitude of the majority socialists toward the Treaty of Brest-Litovsk was indefensible on Social Democratic principles and at the same time damaging to German national interest.

But they who think that the democratic character of Otto Braun does not reflect the deep longings of the majority of the

German workers do not know those workers. Stalin did not know them when he told Churchill and Roosevelt contemptuous jokes about the unrevolutionary and docile nature of the German working class; the Russian leaders have had occasion since 1945 to learn that the German workers are by no means so docile as Stalin thought. They have preferred order to chaos, but also freedom and equal rights to serfdom. Although the statesmen of Weimar failed to avoid the catastrophe of the Hitler regime, the Social Democratic party was not only easily restored in 1945 but also able to win the adherence of the former communist vote.

There exist, of course, great differences between the Weimar and Bonn Republics, with respect both to their internal political complexion and to the international conditions surrounding them. There is, however, a bridge leading from the Weimar Republic to present-day Germany, and it is this bridge that I have tried to sketch. If from the beginning the Bonn Republic saw its way cleared of some of the most pernicious conflicts which beset Germany in the past, the Weimar Republic can claim credit for this achievement. In its history the last dutiful and responsible Prussian statesman, Otto Braun, and his government performed a memorable task.

POLITICAL FAITH AND FRANCIS BACON*

BY HOWARD B. WHITE

WHAT we may call political faith is, or has been until recently, the commodity most widely distributed in American political thought, perhaps more widely than *le bon sens*. Political faith implies the translation of a conjecture regarding man's political future into a certitude, a certitude that is a guide alike to science and statesmanship, that is virtuous in the sense that religious faith is a theological virtue, that is above reason and perception and becomes the loadstone of political activity.

Political faith is a lineal descendant of religious faith, and, in Western society, particularly of Christian faith. It is obvious that the secularization of Christian faith is a distortion of its original meaning, but distortion and descent are not necessarily antithetical; even an illegitimate child could inherit the Hapsburg chin.

To pursue the analogy may help to make my meaning of political faith clearer. Christian faith is the knowledge of God's will, but it is a knowledge that is incomplete and progressive, incomplete because men are pilgrims in this world, progressive because it means for man and for society a continued removal of ambiguity and doubt and implies a growing familiarity with "the face of God." Political faith is a knowledge of the will of nature's god, but it too is imperfect and progressive, as scientists too are pilgrims. Christian faith is a prerequisite to, perhaps an assurance of, salvation. Political faith is a prerequisite to a beneficent society. The doubts and fears of the Christian come from his own vanity, and not from the objectively doubtful character of God. The doubts and fears of the politically faithful are weaknesses of their own, not

* **AUTHOR'S NOTE**—This article is derived from a much more comprehensive study of Francis Bacon, which will permit elaboration and documentation of the arguments herein contained.

of the this-worldly salvation. Christian faith has its heretics, men who have once seen but have sinned against their consciences. Political faith has its heretics, men who have taken an unearned rest from the arduous labors of the faithful. Christian faith is exclusive, according to Calvin "the only thing wherein the heart of man can recline." Political faith is also exclusive. It too can give comfort to those who cannot endure the darkness of history, the "panorama of sin and suffering," and can provide man in his pilgrimage with a this-worldly pillow. Christian faith is a virtue of grace; it is "a stumbling block to the Jews and foolishness to the Greeks." Political faith is likewise a stumbling block to traditionalists and foolishness to skeptics.

As political faith is related to Christian faith in its heritage, it is related to it to some extent in its opposition. There is a tension between faith and philosophy, however construed, for if the object of one's faith is true and worthy, the virtue of faith must transcend the intellectual virtues. The two kinds of faith are further related in the manner of holding. When men first began to transform the theological virtues into secular ones and to transfer the concept of salvation to the world of man's pilgrimage, they probably held to their faith with the same passionate seriousness as the Christians. Today it is often true that political faith may be lightly plighted and lightly renounced, but it is not always and necessarily so. John Dewey made clear the affinity of the two kinds of faith: "The weaker our faith in Nature, in its laws and rights and its benevolent intentions for human welfare, the more urgent is the need for a faith based on ideas that are now intellectually credible and that are consonant with present economic conditions, which will inspire and direct action with something of the ardor once attached to things religious."

Where political faith and religious faith differ obviously is with respect to their object, and here child and parent become almost irreconcilable. Political faith is a secular development. The man who, as far as I know, more than anyone else brought its tenets to politics was Francis Bacon.

I

It is no accident that Dewey himself considered Bacon the "real founder of modern thought."¹ What made Dewey regard Bacon as the true founder of modern thought was his belief in shared experience and collective research, the ramification of science into secularized charity, the conviction of the possibility and the direction of progress.

Dewey, to whom the only moral and political end was "growth," directed his own faith less to an imagined or fancied goal than to a goal progressively actualizable in experience. Bacon too said that until the perfection of natural history it would not be possible to know even what to wish; and, in so far as he had a beloved and fancied goal, it was shadowy and remote, and one must walk far to see it. Dewey, who quoted with respect Bacon's "best known aphorism" that "knowledge is power," believed that the power of man over nature could replace the power of man over man only if science itself were the creator of values. To Bacon, too, man, by abandoning the disputes of the schools, resisting the desire to answer the questions of the Sphinx which related to the kingdom over man, could slowly create the kingdom over nature. Dewey's this-worldly faith involved a risk, and he was aware of that risk and wrote that "A culture which permits science to destroy traditional values but which distrusts its power to create new ones is a culture which is destroying itself." The alternative, not to permit science to destroy traditional values, seems not to be a matter of discussion. On the trust one must stake all. Bacon too claimed that he staked all on the triumph of art over nature.²

Yet Bacon's statement is suspect. He did not stake all on the triumph of art over nature, because he proceeded with very great

¹ John Dewey, *Freedom and Culture* (New York 1939) pp. 164-65, and *Reconstruction in Philosophy*, Mentor edition (New York 1950) p. 46.

² Compare Dewey's *Freedom and Culture*, pp. 131, 141, 154, with Bacon's Sphinx (De Sapientia Veterum, No. 28) in *Works*, ed. by Spedding, Ellis, and Heath (Boston 1860) vol. 13, pp. 54-57, and with vol. 6, pp. 446-50 (De Interpretatione Prooemium), vol. 6, pp. 33-34 (Valerius Terminus), vol. 1, pp. 233 ff. (preface to *Novum Organum*).

circumspection to what Dewey called the destruction of traditional values. The destruction, or perhaps the subversion, of those values would coexist with their supremacy, and for most men the destruction would be unobserved and harmless. Political faith was the faith of a scientist, available for those who needed it, thinly spread on Latin phrases and mingled with sycophantic flattery of James I. Bacon's faith was neither romantic nor volatile; it was part of a systematic body of doctrine. Precisely because it was considered actualizable in a remote historical future, it was meant to coexist with a society whose politics were traditional and conservative. Like Descartes, Bacon had to live in a house while his own was being built. That house, as befitted the elegant Lord Verulam, was the spacious one of crown, church, and empire.

When Bacon is seen in this light, we must modify the usual interpretation of him as a royalist, Anglican, and imperialist, with little more than Tudor principles. He was a Tudor because he saw modern Europe, and especially England, as the vehicle of change. His *morale par provision* was not simply a house; it was a ship, the stoutest that he could find, to take mankind to his own utopian commonwealth, the remote island of the New Atlantis, the subject of Bacon's most important political work. Important as it is to know why Bacon considered his the most yare ship for such a voyage, my present concern is not so much with the ship as with the sea and the island.

II

It is but a shallow doctrine that holds that the long voyages of geography and exploration explain the island utopias of the sixteenth and seventeenth centuries. The excitement which a returned seaman could engender in Plymouth, Cadiz, Venice, or Antwerp, with his tall stories of far-away marvels, gave a frame, of course, to philosophical discussion cloaked in travelogues. But the allegory of ocean is older than Columbus, and geographers referred to its antiquity. Hakluyt tells us that when his cousin first began to instruct him in navigation he referred to the 107th

Psalm, and Purchas discusses at length the symbolic importance of Solomon's famous journey to Ophir. The voyagers to Peru raised the question whether Cuzco might be Ophir; and contemporaneous writers compared Drake with Moses. The obvious differences between sea and land are meet for allegory, and in the intermingling of imagery and reality the decision to locate an imaginary commonwealth on a remote island or on a mountaintop is not a capricious one, but is formed out of much more than the mere fact that there were voyages of exploration.

The sea stands for the unknown, or the only partly known. A wilderness may be traversed, charted, cleared, and civilized. The sea may be traversed and charted; it remains uncleared and uncivilized. Life at sea is possible only in fairly close confinement, and more or less temporarily. The contrast between the society at sea and the surrounding waters is striking and almost complete. If the sea is primeval nature, the ship is a highly organized, disciplined convention. If the waters are ever-moving and free, the power of the captain approaches despotic power.

If the sea stands for nature unknown, it stands also for nature unconquered, somber, relatively invariant. For all the differences of climate and season, there is but little change in the open ocean. It is nature absolute and impenetrable, suggesting unlimited possibilities both for adventure and for tragedy. Even the tourist, under the luxurious conditions of modern travel, cannot but sense something of the mysteries and somberness of the vast, unconquered regions of the ocean. "A hermitage in the forest," wrote Melville, "is the refuge of the narrowminded misanthrope; a hammock on the ocean is the asylum for the generous distressed. The ocean brims with natural griefs and tragedies; and into that watery immensity of terror, man's private grief is lost like a drop."

Until the recent crossing of the airways, water remained the chief element transversable but unconquerable. It is, moreover, the area of man's greatest accidental triumphs—a fact of great importance to Bacon. Normally one climbs a mountain for exploration or exercise. Men have gone to sea for trade or empire, and

found a continent in the Atlantic, the island of Calypso, Tahitian wives, strange tales, or the knowledge that is said to broaden. It is not strange that it was a naval power that is supposed to have amassed its empire absentmindedly.

Travel has often been the symbol for philosophy. We leave home to learn what we do not know. In the apocryphal Book of Ecclesiasticus we are told that the wise man will visit strange lands. In such a spirit are Usbek and Rica the first to leave Persia in search of wisdom. And in such a spirit is Ahab dissuaded from the lucre of whaling in a relentless search after the greatest, most intelligent, most malignant whale of them all. If travel is the symbol for philosophy, travel by sea is the most appropriate kind, for "they that go down to the sea in ships see the works of the Lord and His wonders in the deep."

Yet ocean travel, like philosophy, is fraught with dangers: spiritual as well as material. What is hidden in and beyond the ocean is not simply what the voyager himself does not know. It may be something that is hidden from man. Its discovery and the penetration of the ocean may be shameful, and dangerous to society. The very pleasures of ocean travel are hazardous. The most pervading use of ocean travel is trade, and trade has seemed to many societies of questionable morality. Moreover, it is one thing for Odysseus to travel and learn wisdom, for he was the wisest of those who went to Troy. It is quite another thing to set up a society on a remote island and encourage mankind to travel there. The ancients were clearly aware of this difference. Leaving home in search of wisdom is an abandonment of traditional ways; it means at least an abstention from the loyalty which every political order must demand. Odysseus may, with the aid of Zeus, leave home, even escape from Calypso and return home. But can society? Even Socrates, if I understand the passage in the *Crito* correctly, like Achilles before him never returned to "fertile Phythia."

This brief discussion of the allegory of the ocean is not intended as a digression. It indicates why the perfect political order of, let

us say, Plato is not an island commonwealth. His island of the old Atlantis, which was Bacon's model, is luxuriant, tempting, and barbarously aggressive. But in the *Laws*, when Clinias, the Cretan, says that he is to help establish a Cretan colony, the Athenian stranger notes with regret that the colony is to be near the coast, with excellent harbors. Harbors meant trade and luxury, and luxury meant the beginning of corruption. The good polis is more likely to be the city of the mountain, where man is politically and economically self-sufficient, than the city of the plain, where man is corrupted by commerce and cosmopolitanism.

This contrast, between mountain and plain, furnishes the background for the mythical history presented in the Third Book of the *Laws*. Many times floods and plagues have destroyed the world of men. In some destructions, notably by deluge, the people on the mountains are most likely to survive. These people do not soon penetrate the plain, but live lives of simplicity, with neither poverty nor wealth, and with little or no memory of the civilization just destroyed. Only gradually are the generations persuaded to try the plains; and that means the arts and crafts, the goods of comfort, learning, and wellbeing that we associate with civilization. Some day the flood will come again, and the changing world will repeat the cycle of birth, growth, and decay.³

The people of the mountains stay home; they do not go out in search of wisdom. As they gradually penetrate the plains, the differences between the two civilizations, though they may be considerable, are within a recognizable frame. The people of the mountain have little recollection of the cities of the plain, but in the plain the mountain is always comprehensible. There is not progress, but alternation. How completely different an ocean voyage: adventurous, mysterious, avaricious, and tragic. It is not in Plato alone that this unsentimental, unprogressive view prevails. Cities of the plain, like Babylon or Ilium, were impermanent, and were more likely to be feared and suspected than ad-

³ Plato, *Laws*, 704A-705A, 677C ff.; *Statesman*, 272C ff. Aristotle, *Politics*, 1327 a 11 ff. Cicero, *Republic*, II, iv.

mired. And even more was that true of commonwealths that could be reached by sea: like Ophir or the old Atlantis.

If modern thought changed all that, it made the change in full consciousness of the allegorical meaning of land and sea. It certainly did not build island commonwealths simply because there had been voyages of discovery and exploration. Machiavelli might compare himself with Columbus, but he certainly regarded his own discoveries as the more magnificent of the two. The allegory of land and sea is older than Bacon, as we have seen, but it was perhaps Bacon who gave it its modern dimensions. When a perfect political order is presented as an island commonwealth the writer may intend to emphasize the remoteness of the place, and the difficulty of finding it, or he may intend to point to the triumph of science, as analogous to the triumph of navigation, which conquers geographic remoteness.

More's Utopia, for example, is a moon-shaped island with abundant harbors. Yet so dangerous are the hidden rocks that a stranger, unless guided by a Utopian, could not enter the haven on the inner side. As for the outer side, the land there is "so surely fenced that . . . few defenders may drive back many armies." It is hard to see how the first travelers came to Utopia at all, except by chance. It is again by chance, in the form of a cough, that we are prevented from locating this utopia. The impression given by the devices which More employs in telling this tall tale is that he is far from regarding it as an achievable goal, or from considering its achievement as more than problematic. There is no political faith here. As Barna Horvath points out, in a study of More's *Utopia*, there is a "riddle in the contradiction of ideal and reality."⁴

Yet Hithlodæus, the central figure of More's *Utopia*, was one who traveled freely, likened by his creator to Ulysses. It was quite different with Prospero, in Shakespeare's *Tempest*. He did not leave home in search of the enchanted island. He was indeed

⁴ Dr. Horvath has given me an unpublished manuscript which is a revised version of two previous publications: "Der Sinn der Utopie," in *Zeitschrift für öffentliches Recht*, vol. 20 (1940) pp. 198-230, and *Angol Jogelmelet* (English theory of law), published by Hungarian Academy of Science (Budapest 1943) pp. 33-82.

content with the study of philosophy in his dukedom at Milan. Grim necessity drove him from his dukedom; and escape itself was made possible by "providence divine." The world of the enchanted island was a remote commonwealth in which changes in power and criteria of justice differed radically from those prevailing in the Italian cities. The substitution of justice for injustice was the substitution of Prospero's real power for his nominal power. That real power was exercised, as far as the court party was concerned, only as the result of a storm at sea and a shipwreck. While Prospero himself created the storm, he says that his enemies were brought to the shore "by accident most strange, most bountiful Fortune." Prospero's great political ends could never have been accomplished if he had been unable to escape from Milan, if he had not met Ariel, who stands for imagination, if Gonzalo had not furnished him with books—for, without his books, if we may believe Caliban, "he's but a sot"—if accident had not brought the court party to the island, and so on. Through his involuntary exile, Prospero may make laws and hold power justly, without the staling effects of custom, which dominates most political moments.

How striking the contrast with Bacon's *New Atlantis*. The images of accident and fortune recede. The bright colors of Bacon's feigned commonwealth are the colors of science and planning and the relief of man's estate. The commonwealth is not an enchanted island or a remote and undiscoverable nowhere. It is a spot which has not been charted, but which, emphatically, can be charted. Its names are not, like those of *Utopia*, references to the remoteness and improbability of political perfection. They are names that conjure up the goals and tools of scientific power. The nation is Bensalem, or sons of peace, and its academy is Solomon's House. The travelers are driven to Bensalem by fresh winds which follow a calm, but they can see the island a full day before arriving, and they come not upon rocks and shoals, but into a good haven.

In comparing the sea images of Shakespeare and Bacon, Caro-

line Spurgeon says "The great and constant difference . . . is that Shakespeare's [images] are chiefly concerned with the general character, quality, or aspect of the sea, usually in storm, as it might be viewed by a landsman, whereas Bacon's are noticeably vivid little pictures of episodes or incidents on the sea as experienced by a man in a ship or a boat."⁵ I think that is an important conclusion, derived by a method which, while it has been criticized, seems to me extremely valuable. I feel, however, that in adding that Bacon's practical and scientific bent of mind turns him to such images as "ballast," Professor Spurgeon does less than justice to her own findings. If the sea is the unknown, and fortune, mystery, and high tragedy, the writer who speaks of it usually in a storm, and from a vantage ground of one who does not venture but observes, has obviously different intentions from those who speak of the sea from the experience of the voyager. The shipwreck is, to Shakespeare, a source of terror, and the prudent man does not put too much trust in fortune. Bacon, on the other hand, wanted to journey to the New Atlantis. His imagery of the sea is the imagery of the man in the ship because he intended to signify the triumph, not the tragedy, of navigation.

In More, and especially in Shakespeare, the wide and treacherous ocean serves the image of remoteness. In Bacon navigation underlines the potential conquest of remoteness. His idea of a Golden Age of navigation, though remote in time, serves to emphasize the possible recurrence of such an age. It serves to reconcile man to poverty and illness with the belief that a flourishing commerce was had more than three thousand years ago, and, in the astounding development of trade and exploration, could be had again. What successful commerce means here is the substitution of prosperity and longevity for poverty and illness by the triumph of science and philosophy. The people of the blessed isle of Bensalem, or the New Atlantis, are presented as people who know all about the western world that is ignorant of their existence. The improvement of navigation could make the knowledge

⁵ Caroline Spurgeon, *Shakespeare's Imagery* (London 1952) pp. 25-26.

of Bensalem and its utopian institutions available to all and render the conquest of chance a reality.

The second way in which the conquest of remoteness by science is stressed is somewhat more complex. As far as I know, the most important political writings before Bacon which stress the conquest of fortune are those of Machiavelli. Machiavelli's conquest of fortune is, however, problematic. Its instrument is youth, "a stuff will not endure," and the enduring character of fortune is threatened by "vicissitudes." In Bacon, whose indebtedness to the Florentine was very great indeed, it is emphatically not youth, or audacity, that conquers fortune. The instrument is science, or, more strictly, faith in science. The evidences for that faith are chiefly two. The fact that man has made great triumphs without any correct methods is the chief evidence. Printing, gunpowder, and the mariner's compass had been invented by accident. How much greater inventions could be made by adopting the science of the *Novum Organum*! These methods could, moreover, be adopted, because the learned men of modernity, unlike those of antiquity, lived under a monarchy, where civic duties need not keep them from scientific pursuits. For this reason a learning greater than that of Greece or Rome, the learning of Bensalem, could be had in modern Europe, and most emphatically in modern Britain.

To show what can be done Bacon creates a new island, but it is part of his device to pretend that it is a very old island indeed. It is called "new" simply because it is intended to be an improvement on the old Atlantis of Plato. Its society, considerably older than Christianity, has withstood early vicissitudes, and it is equipped with the necessary devices to withstand the earthquakes and floods, the changes in manners and religion, that have made Greece and Rome, Egypt and Carthage, relics, for the knowledge of which we depend on the reconstruction of the historian. The suggestion of an ancient utopia, still maintaining knowledge of navigation in a world alleged to have forgotten navigation for three thousand years, a rock that resists the ravages of earth and sea,

invites a quarrel with the classical cycles of growth and decay. If Europe can do as Bensalem has done, political perfection ceases to be a matter of fortune, which is replaced, in Bacon, by the slow growth of knowledge and power.

III

So much for the sea; let us speak of the shore. Unlike More's Utopia, where pleasure is mingled with austerity, unlike the enchanted island of *The Tempest*, where wisdom and austerity force an almost complete renunciation even of sympathy, the world of the New Atlantis is a perfect utopia, in the sense in which we usually use that word today. The most cursory reader finds many colors, coats of fine cloth and infinite patterns, collections of gems and perfumes, rich chariots, great largesse, unknown fruits and flowers, rugs finer than the Persian, ale clearer than the British, oranges more scarlet than those of the Mediterranean, a large variety of ways, unknown in Europe, of making life pleasant. The representation of pleasures unknown but able to be created marks its teaching as a kind of constructive hedonism. Subtler flavors, richer odors, more colorful visions, more diverse harmonies—all these the New Atlantis emphatically has. Yet these are but by-products of a larger effort, which includes the "effecting of all things possible." Medicine is enormously improved; the sick travelers heal "kindly and fast." The feast of the Tirsan, or father of the family, is awarded to those who enjoy the fruits of science, and the criteria of private distinction are age, health, and proliferation.

Yet in this very worldly paradise there are numerous Biblical analogies. The sick are cast into a divine pool of healing. The island of Bensalem is a promised land, a holy land, a land of angels. The travelers say that their tongues should cleave to the roofs of their mouths ere they forget this land in their prayers, as the Jews prayed that their tongues might cleave to the roofs of their mouths ere they forgot Jerusalem. The people of Bensalem have a tower that is higher than the tower of Babel; they converse with strangers

as if they had overcome the confusion of tongues; and, although Bacon is careful not to say so, they appear to have survived the flood. Their island is called "Sons of Peace," which implies, at least according to one interpretation of the word "Jerusalem," that Bensalem fulfills what Jerusalem only promises.

This world, Bacon's utopian world, differs radically from the world discussed in his essays and public papers. Crown, church, and empire are but steps on the ladder of fortune. As one climbs the ladder these first steps become more and more remote, sinking at last into invisibility. Unseen, they become unusable. Or, to put it more cautiously, it is difficult, perhaps impossible, to return at all. Crown, church, and empire are society's teething rings.

The crown is replaced by what we may call collegiate power. It is not an aristocracy of philosophers, but an aristocracy of experts or intellectuals. The power to determine what knowledge is to be given to the state and what knowledge is to be withheld is possessed by the fellows of Solomon's House, a scientific academy. The greatest celebration in Bacon's utopia is occasioned by the arrival in the city, on a rare visit, of a scientist, who blesses the people as he passes. The highest honors in Bensalem are given to inventors, and statues are erected both to the living and to the dead. The truth of Christianity is established by a miracle; but the judges of that miracle, of its truth or imposture, are fellows of Solomon's House.

Royal power appears still to exist but, for the most important purposes, royal power is subordinated to collegiate power. Moreover, we are told nothing about the education of the powerholders. We have no reason to believe that rigorous moral instruction is a prelude, as it is among the ancients, to intellectual perfection. The justification for the expert's rule rests on faith in the essential beneficence of science and of the scientist himself. The progress from royal to collegiate power is shown to the travelers to Bensalem, from Europe, who during their short stay are gradually made aware of the noble institutions of Bensalem. When they first arrive their host is a Christian priest, and their spokesman is the

captain or "principal man" of the company. When they have become converted to the blessedness of the island utopia their host is no longer a priest but a scientist, and their spokesman is the narrator of the tale, or Bacon himself.

If this comes strangely from the Lord Chancellor who styled himself a perfect and peremptory royalist, the religious heterodoxy of Bensalem comes as strangely from one who wrote to Buckingham that the doctrine of the Thirty-Nine Articles was "soundly and orthodoxly settled."⁶ The world of Bensalem, supposedly located in the Far Pacific, had contacts at one time with the old societies of Aztecs and Incas, though it is older than either. Its famous feast of the Tirsan Bacon derived from accounts of a Persian feast to the father of the family. Much has been changed, however, from the Persian feast, and most of the imagery is borrowed from the celebrations of fertility among the ancient Egyptians, dedicated to the goddess Isis. Greetings and gestures are derived from travelers' accounts of the Moslem world, but Moslem doctrines regarding the teaching of Christ are stripped from the Koran, and from accounts of these same travelers, and placed in the mouth of a Bensalem Jew. The island itself is once referred to in terms identical with the title of a dialogue attributed to Hermes Trismegistus. The miracle that brings the gospel to the shores of the City of Renfusa is, in part, a compound of pagan initiation rites: the motionless boat, the ark unaffected by water, almost the same images as some of those used in *The Tempest*, where Shakespeare makes similar use of pagan initiation rites.⁷ And the fellow of Solomon's House receives the travelers and the citizens with blessings that could be appropriate to a god. In all of the varied images one group stands out: those borrowed from ancient Egypt, whose worship of nature had, a short time before,

⁶ J. Spedding, *The Letters and the Life of Francis Bacon*, 7 vols. (London 1861-74): Letter to the King, 31 May 1612, vol. 4, p. 280; Advice to Villiers, First Version, vol. 6, p. 17.

⁷ See especially the widely attacked but, I believe, still unrefuted books of Colin Still: *Shakespeare's Mystery Play* (London 1921) and *The Timeless Theme* (London 1936).

found favor with a much bolder writer than Bacon, Giordano Bruno.

In his work on *The Wisdom of the Ancients*, an interpretation of old fables, Bacon finds some things in the Promethean legend that have a wonderful concord (*miro consensu*) with the Christian faith. He does not, however, explore these things, lest he use strange fire at the altar of the Lord. In this, one of a great many passages where Bacon hints that he has reasons for not telling all, he offers fairly conclusive evidence of his own heterodoxy. Yet it may be true that in this work Bacon did not use the strange fire. *The Wisdom of the Ancients* is not a fable wholly of Bacon's own making. It is a book purporting to interpret old fables, and much of the interpretation is misleading and far-fetched. The book does not actually tell us how to interpret the fables Bacon is discussing. One thing, however, that it most emphatically does do is to tell us how to interpret a fable that Bacon himself wrote. Apart from court devices the only work of Bacon that can be considered strictly a fable of his own is the *New Atlantis*. In this fable he certainly does use strange fire at the altar of the Lord. And here it is clear that his certain Anglicanism, a prop for the unity of Great Britain and the subordination of the church to Tudor power, has given way to a civil religion, with much ceremony, little conviction, and an eclectic theology.

The third foundation of Bacon's temporary household was the British Empire, and, in the *New Atlantis*, it too has gone. Gone are the brave and warlike people who are supposed to be the safeguard of national greatness. Gone is the proud insistence that the wealth of Spain depends on the Indies, and the Indies belong to him who commands the sea. Gone are the patriotic predictions of British greatness, and of the greatness of commercial imperialism. The society of Bensalem is emphatically an autarchic society. Its commerce belongs to a distant youth, and the greatness of its utopian splendor is self-sufficient. Its world is a closed world, with almost Spartan naturalization laws.

Bacon's model for the New Atlantis is, of course, the old At-

lantis of Plato's *Critias*, according to which the people of the old Atlantis fought, nine thousand years before Solon, a war with Athens, and the armies of Atlantis were defeated and destroyed. As the prevailing Jacobean theology placed the Fall around 4000 B.C., Bacon cannot very well have accepted Plato's chronology. He does pretend, however, that a similar expedition journeyed from the Atlantic continent (America) to the New Atlantis, and that the invading armies were repulsed by a very humane monarch who made them promise never again to take arms against him. From that time to 1600 A.D., a matter of at least three thousand years, there is no evidence that the people of the island ever fought another war, and there are signs that they did not.

We are faced with the paradox that the militant patriot and the herald of British sea power, who quarreled with the Schoolmen on the ground that one could preempt a just war, should make his utopia a land which enjoyed many centuries of uninterrupted peace. In Bacon's treatment of foreign policy there is a distinct path, historically, from imperialism to isolation to universality. And it is perhaps harder to understand the road from imperialism to universal brotherhood than it is to understand the road from peaceful Anglicanism to the civil religion of Bensalem.

Perhaps we can understand this difficult path better if we realize that its literal meaning is not its true meaning. The idea that universality becomes possible as the result of a successful imperialism is not unique: many an imperialist has enjoyed this doctrine. To Bacon, British imperialism, the imperialism to which he was most closely drawn, depended on the defeat of imperial Spain. Bacon tried to modify the concept of the just war by affirming that a preventive war is a just war. If we are sure of aggressive acts against ourselves we have every right to preempt the quarrel. If a nation's religion demands widespread conversion we can be sure of such aggressive acts. In other words, war against a proselytizing creed is always justified, and justified, in the language of latter-day diplomacy, at places of our own choosing.

What concerns me here is not simply that Bacon held such a

doctrine, or that he applied it to European defense against the "sword of Mahomet," but that he applied it to any or nearly any British defense against Spain. If Spain was, in fact, a proselytizing power, and a threat to the Anglican Church, Britain had a right to take the Spanish Indies. But British power and British expansion mean, in Bacon, something more than we commonly associate with British imperialism. They imply commercial power, and, as we have seen, commercial power is symbolic for the power of Baconian science. What is really at stake is less the British justification for grabbing the wealth of Spain than the justice of opposing proselytizing science to proselytizing Catholicism. A scientific imperialism may, however, be compelled to the course of isolation. Only by isolation from Europe can it survive the vicissitudes of European society. While its achievement is ultimately universal, that universal achievement demands aloofness from religious warfare. Thus it becomes clear that only a mixture of scientific imperialism and scientific isolation can create the utopian goal of scientific universality.

The paradox of imperialism, isolation, and universality is by no means the only paradox of the *New Atlantis*. Men still create new weapons of war, in a country where they seem unnecessary. Citizens who have not seen a stranger for thirty-seven years are paragons of hospitality. They give great largesse in Bensalem, but they are never "twice paid." And the prevailing sentiment for the lords of science is compassion, a strange sentiment for the rulers of utopia.

These paradoxes lead us, it seems to me, to Bacon's principal source, the *Critias*. The old Atlantis, according to Plato, who created it, as far as I know, was a part of the world allotted to Poseidon, symbolizing the flux of ocean. As must be expected of the child of ocean, it perished through earthquakes, and left a shoal rendering navigation impossible. Bacon takes up the myth, denying that Atlantis was a child of ocean, and that it was destroyed by earthquakes. Bacon says that it was rather destroyed by a flood, and that the destruction by flood was partial and in-

complete. The flood was assigned by Plato to old Athens, where the people of the mountains might live and prepare a new Athens in time to come. By denying that Atlantis was a child of Poseidon, and by substituting floods for earthquakes, Bacon signifies that even the old, prosperous, aggressive continent of the old Atlantis could survive the wrath of the gods and become, in fact, the scene of the relatively refined civilizations of Peru and Mexico. It represents no barrier to navigation, no rocks and shoals, but a new continent. Bacon's conscious and deliberate distortions of the Platonic myth serve to vitiate, if not to destroy, its moral purpose.

Side by side with the old Atlantis, Bacon creates the New Atlantis, of equal antiquity, as far as we can tell. The coexistence of the two mythical commonwealths gives Plato a twofold answer: the reappearance of the first is made less problematic by denying the presence of the shoals, where no man could navigate; while the free creation of the second suggests that Plato's mythical continent could indeed have survived, for all its lush living, had it known the beneficent institutions of Bacon's own utopia.

The *Critias* is an incomplete dialogue, in the clearest formal sense. It breaks off abruptly when Zeus is about to give a speech to the gods about the punishment of the old Atlantis. In this case the punishment means destruction. The *New Atlantis* also is formally incomplete. It ends, however, not at the beginning of a speech but in the middle, or, probably, at the end. The speech is given by a scientist who is, in the Baconian context, a demigod, or the most godlike of men. It deals not with destruction but with the means of avoiding destruction, particularly natural destruction, and, in the concluding remarks, the most general natural destructions, like floods and earthquakes.

The changes Bacon made in his own version of the Atlantis myth make it clear that he, at least, considered the incompleteness of the *Critias* a deliberate incompleteness. There are two reasons for the deliberate omission or interruption of a speech: either the speech cannot be known, or it may not be spoken. Its unknowability may be general, a human limitation; or the speech

may simply be unknowable to the particular persons in the particular situation. The same may be true of the other form of silence, the abashed silence, for a speech may be shameful to all men, or simply to some men. The real difference between Plato and Bacon, in matters of political philosophy, rests upon the symbolic question whether and under what condition the speech of the god, dealing with the maintenance or destruction of the human things, can be known and spoken. I do not pretend to any complete interpretation of the *Critias*, or to any decisive answer to this question. Certainly in Bacon, however, the speech of the god is given because the divine chastisement can be known by natural divination and can therefore be avoided. This is the foundation of Bacon's political faith.

Bacon's remarkable treatment of the fable of Orpheus further develops this thesis. Orpheus, who subdued all living creatures with his lyre, tried to subdue the infernal powers as well, and, but for his impatience, would have succeeded. On his failure he withdrew from the company of women and subdued the beasts of field and forest, until his gentle music was drowned out by the din of the Thracian women. The attempt to subdue the infernal powers was, according to Bacon, the noblest work of philosophy, and meant the subjugation of nature. It was impatience that turned men away from natural philosophy. But, once having turned to natural philosophy, even though defeated by his impatience, Orpheus could no longer take pleasure in familial things. He sought, instead, a lasting fame, by turning to the subjugation of the beasts, that is, political philosophy. In this he succeeded, as men with gentle music found states and commonwealths. But these too are transient, and some day the gentle music will be drowned out by the rebellious din. Had Orpheus succeeded in his first endeavor, and brought about, by natural philosophy, the restoration of corruptible things, he could have founded a commonwealth that no discord could destroy. It would withstand, like the New Atlantis, the ravages of time.

Bacon's faith in the future of natural philosophy, as expressed

in the Orpheus fable, is nevertheless a political faith, as it is by abandoning some of the great questions of political philosophy, and returning to natural philosophy, that man can solve the riddle of the political life. As we have seen, the development of natural philosophy demands the existence of a provisional political teaching where learning is most likely to flourish. Until that happens, and until there is developed a philosophy created out of a still uncreated natural history, it is not possible to know even "what to wish." For that reason the *New Atlantis* itself is an incomplete book, for it deals with an unknown but actualizable perfection. Some things can be seen, however, and those things involve a large-scale transformation of manners, particularly with regard to fame and glory. Bacon showed more than once a certain contempt for familial things, and suggested that men have wives and children to perpetuate themselves, while the truly great may perpetuate themselves in memory by their fame.

But fame is treacherous. Light and worthless objects, like the philosophy of Aristotle, float upon the stream of history. Weightier objects sink. The river of history must be covered with impenetrable ice, so that the weightiest objects may stay aloft and men, or at least most men, cannot plumb it. If men are to neglect idle disputants and elevate founders of commonwealths, and above these, inventors of printing and gunpowder, bread and wine, and above all, those inventors of the useful arts and inventions known only in Bensalem, and indescribable to the unregenerate, changes of popular worship are required. Just as crown, church, and empire constitute a unity in Bacon's provisional teaching, collegiate power, civil religion, and universality constitute a unity in his definitive teaching. In that civil religion the love of fame plays a critical role, but fame must be made more responsible than it is in the Europe where Aristotle is famous. The love of fame may not be necessary for the Baconian scientist himself, as he has compassion for his guiding stars. But the public must erect monuments to inventors, rather than to saints, and that substitution requires a certain manipulation.

IV

An analogy that Bacon sometimes uses is the analogy of men and sheep, indicating the political frame of scientific triumph. Bacon was not the first to suggest that the wise legislator has to rule sheepmen. Plato speaks of sheep, and Machiavelli says that in the new republic men have to be moved about like sheep. But even Machiavelli appears to have accepted the destruction, by natural causes, of the most carefully planned and prudently constructed empire. His reason is not so much a distrust of natural science, of which he says little, as a belief in the politically wholesome character of necessity. Floods and earthquakes illustrate the dependence of *virtu* on privation and adversity, not on prosperous complacency. Bacon's sheep, on the contrary, sleep at night. They can live without adversity, because they have no need of *virtu*. The mass of men are without the burdens and luxuries of political action, the aspiration to freedom, and the dangerous consequences of discontent. They give themselves over contentedly to lives of health, variety, and proliferation.

But what of the holders of power and the recipients of adulation, those who are to replace Aristotle in historical immortality, the fellows of Solomon's House; are they the shepherds? The analogy indicates compassion, and tells us why, even in utopia, love may be mingled with pity. The secularization of the theological virtues does not end with faith, in Bacon; but a kind of political charity (*agape*) is derived in the same way. Charity is, Bacon tells us, "the spice, the mixture whereof maketh knowledge sovereign." It is charity which refers all learning to the "good of men and mankind." That this kind of charity, like political faith, rests on foundations completely different from those of the theological virtues from which it is borrowed goes without saying. Indeed, Bacon deliberately places the study of God's works on a level with the study of God's word, and suggests that the study of natural history, freed by charity from the venom of the serpent, may therefore bypass the Fall. The source of Baconian charity may be made clearer by quoting a passage from the essay "Of

Love": "There is in man's nature a secret inclination and motion, toward love of others; which, if it be not spent, upon some or a few, doth naturally spread itself towards many; making men more humane and charitable . . . nuptial love maketh mankind . . . friendly love perfecteth it."

The transition from the private immortality of parents to the public immortality of inventors is achieved by virtue of charity, and strengthened by the compassion which the immortal scientist feels for his sheep. It is true that Bacon appears to accept the Aristotelian thesis that wonder is the root of wisdom, but wonder is to him a personal pleasure, deepened and strengthened by its development into agapasm. Only in the light of this can I understand the statement of Rousseau that "perhaps the greatest of philosophers was Lord Chancellor of England." Rousseau too promoted a charity that is stripped of grace and made available to natural man, and Rousseau too thought the best of men "he who distributes his affections equally among his fellows." My reason for introducing a later writer is, however, to point to a difference which may make Bacon's meaning clearer. Bacon did not intend, as Rousseau apparently did, to create compassion, but expected that the role of the shepherd would naturally make men compassionate.

Indeed, perhaps of all political philosophers, speech of charity or compassion comes most strangely from Bacon. His images—the light and the loadstone, the courtroom and the torture chamber, the view of nakedness, or the height of the stars—those images have grandeur and remoteness, they flash, but they do not touch. They are strangely devoid of warmth or friendliness. Bacon does not seem to have been what Burke calls "a man full of warm speculative benevolence." Baconian charity is the love for the stranger in the statistics. It is, nonetheless, a very real love, effective in its historical impact. The love of the learned for the unlearned, or at least for what they can do for the unlearned, involves the power of the learned over the unlearned. Thus the famous remark, in the *Novum Organum*, that Bacon's philosophy will go far to level

men's wits becomes suspect. Man is leveled by manipulation, but the manipulator is not leveled. Man is, moreover, the object of compassion because he is an alien in the world. Baconian charity is almost as much the object of his thought as Christian charity is of the New Testament, but there is an important modification. The fulfillment of natural charity requires the transcendence of natural charity by the mingling of charity with pity, suggesting inequality.

It is obviously doubtful how far Bacon himself shared the political faith he intended to create. He hedged his utopia with cautious restrictions. He did what he could to prevent the growth of a large intellectual class. The caution with which he wrote indicates a reluctance to let man wander at large in an alien and incomprehensible world. This seems to suggest that he was aware of the dangers of collegiate power. The question that is obvious today is whether such power and the numerous inventions it could be expected to bring forth might be used not for the relief but for the impairment of man's estate. Yet, while Bacon was certainly aware of that possibility, it is hard to escape the conclusion that his only safeguard against the abuse of collegiate power was the essential beneficence of science and of the community of scientists itself, a supreme act of faith.

However unreal some of Bacon's expectations may seem to a sadder generation, many things raise him above his followers. Not the least of these is a realization of the price that has to be paid for political faith. His very caution comes of an understanding of that price. The speech of the god can be known because it can be created, but its creation demands the acceptance of a world that is somehow less wonderful than it had been, because it is alien and incomprehensible. What further elevates Bacon is the relation of his caution to his risk. He did not, as I have said, stake all on the triumph of art over nature, but provided a "fair retreat," in the event of failure, to the still pleasant concurrence of crown, church, and empire, in a world where the speech of the god remains unknown.

Whether that retreat or any other retreat is still open, I cannot here say, if at all. The alternatives posed by Lord Verulam are, it seems to me, his provisional politics and his own, largely uncreated, definitive politics. One who does not know that the true political philosophy has been created or discovered can rest content neither with the rejection nor with the affirmation of Bacon's utopian schemes. I cannot but feel that the very snobbery of the man is a hindrance to the philosopher, but I am aware of the adage that if you shoot at a king you must kill him, and that requires the marksmanship of another Bacon. We have come some distance perhaps from the free construction of trans-historical regimes. Yet even a distinguished American philosopher could speak, in this century, of the "agapastic theory of evolution," paying what I think was unwitting tribute to the Baconian heritage, and numbering himself among those who believe that the speech of the god can be created.⁸

⁸ C. S. Peirce, in *Chance, Love and Logic*, ed. by Morris R. Cohen (London 1923) p. 276.

BOOK REVIEWS

CLAUDE, INIS L., JR. *National Minorities: An International Problem*. Cambridge: Harvard University Press. 1955. xii & 248 pp. \$4.50.

In this short book we are offered, rather than the general essay promised by its title, a study of the trends in international treatment of national-minority problems since the League of Nations' system of guarantees. The author's approach to the policies he reviews is radically internationalist. In his view, we have not merely a succession of conflicts over the status and fate of national minorities which erupt from time to time into international politics. The ethnic heterogeneity of the world, upon which an organization into nation-states has been imposed, creates a pervasive problem of national minorities as such, and this, as a constant threat to international stability, requires, for adequate solution, treatment by the international community through its general political organization.

From such a point of view, the system of international guarantees of rights in favor of a few specified national minorities, established in connection with the League of Nations, represented a high point in international action, however limited the system was in application and deficient in practice; and from that high point, the more recent trends are only a steady decline. The League system, in the beginning, was at least a "tentative internationalization of the problem," and "it was implicit in this international decision that all national minorities, which were by definition groups whose political status was determined in violation of the legitimizing principle of national self-determination, should enjoy treatment conforming to the standard laid down in the legal instruments of the League minority system." The tendency toward internationalization was frustrated, however, when the leading powers of the League yielded, for political reasons, to unilateral or bilateral solutions of specific disputes over minorities of whose rights they were, in fact, the guarantors.

Since then the prevailing trends have been to solve minority problems by their elimination, whether through mass transfers of population, as happened in Central Europe during and after the Second World War, or through advocacy of assimilation, or, where that has not been possible, through bilateral negotiations, as in the question of the former Italian colonies before the General Assembly. Indeed, in the United Nations, as Professor Claude clearly demonstrates, the practice so far has largely been to invoke an internationalist attitude

toward minority problems only when it has been at the moment politically expedient for the invoking state to do so. His analyses of the discussions of an international guarantee of minority rights, in connection with the Covenant on Human Rights, and of the question of the treatment of Indians in South Africa are, from this point of view, especially interesting.

By collecting in one place all the many ways in which national-minority questions have entered into international affairs in the period under review, Professor Claude has written an indispensable book for students of these problems. Not the least value of his study is his great talent for accurate summaries of complicated events and for concise analysis. The picture he presents will not be quite so dismal for those who do not share his neo-Wilsonian outlook. Yet it is perhaps to his merit that, despite his appreciation of the political difficulties standing in the way, he remains so firm in insisting that international standards backed by international guarantees are the only acceptable solution for the national-minorities problem.

STANLEY MILLET

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CHINOY, ELY, with introduction by David Riesman. *Automobile Workers and the American Dream*. New York: Doubleday. 1955. xx & 139 pp. \$3.

Chinoy's monograph is unquestionably a valuable addition to the literature on contemporary American social mobility. It offers a singular case-history test of the viability of the "American Dream." For the group studied, the answer appears inescapable: the traditional doctrine of upward mobility has little meaning to workers in the nation's largest industry. Intensive interviews with 62 workers in an unidentified Midwestern plant in 1946 and 1947, supplemented by follow-up inquiries in 1948 and 1951, disclosed very little occupational ascent and little hope of ascent. The question of correspondence between dream and reality was irrelevant; the dream itself had disappeared.

Rising into the managerial hierarchy, which had been a conspicuous career pattern in the industry only a few decades before, was now completely out of the question. Although many shop workers had been promoted to foremen during the war, half the workers interviewed had never thought of becoming foremen; only six had definite hopes of such a promotion, and only one had satisfied his hopes by 1951. Nor were more limited aspirations very prevalent. Only one interviewed worker

had any interest in white-collar work. A very small percentage of the unskilled workers were oriented toward skilled work; only one of these had a skilled job by 1951.

Chinoy discovered both objective and subjective reasons for mobility blockage. Most of the new foremen were graduates of a nearby state college or the company's own trade school, rather than promoted shop workers. The new skilled workers were generally products of a special apprenticeship program which tended to recruit younger men. Few of the auto workers had the education or skill for white-collar work. But, besides these objective limitations (or, possibly, as a rationalization for them), the workers claimed that they had little idea of "how to become a foreman," that they did not want the responsibilities of a "man in the middle," that they earned more than the typical white-collar worker.

Of course, they were not actually "satisfied" with their jobs. Three out of four had considered leaving the factory, most of them planning to set up small businesses or buy a farm. But very few took any concrete steps, and by 1951 only three had achieved their goals. In fact, only a handful left the factory for any reason. The security that came with seniority seemed preferable to any unsure alternative. One worker's comment furnished the keynote: "As long as I stay here, I am pretty sure of working."

For the plant's unskilled workers (95 percent of those employed and three-fourths of Chinoy's sample) the typical job aspirations were simple and often realizable. They could advance to what was defined, in their own informal hierarchy, as a more desirable position. The fundamental criteria were regularity of employment and the relative absence of physical and psychological strains. For instance, unskilled custodial work was at the bottom of the list, assembly-line work one step above, "off production" work (shipping, unloading materials, disbursing tools) at the top. It is interesting that neither skill nor pay rate, the usually emphasized dimension of an industrial status system, was a crucial element in this subjective classification.

Chinoy does not suggest that mobility cessation encouraged any atmosphere of defeat. Other goals were substituted for those that disappeared with the dissipation of the American Dream. Consumption goods—homes, cars, and the like—were transformed from "a symbol of economic success into a significant form of personal progress in itself." The achievement of security, better working conditions, higher wages, even though acquired through union contracts and institutionalized seniority systems, was defined as advancement. Many, in typical

American fashion, focused their hopes for further mobility on their children. The success formula was, itself, deprecated, and the quest for "happiness" became, at least verbally, a satisfactory substitute. The trade union—the United Automobile Workers, CIO—supplied the most important functional equivalent to the factory organization in aspiration goals and involvement satisfactions.

The union, of course, offered an alternative mobility ladder. Few could become full-time officials, especially since the union was no longer expanding at the old pace; but the fact that many auto workers had become officials was in visible evidence, and the avenues for rising into the officialdom were more or less understood. For those who could not leave the factory for a union office, becoming a steward provided an opportunity for personal gratification and enhanced status. And, despite growing bureaucratization, membership inactivity, and institutionalization of functions—even in the UAW-CIO—the union still presented a "personal and social experience" which made the "job in the factory seem much more satisfying and [led] to diminished interest in out-of-shop goals." As a result of the union's role, the workers "have come to see that their future well-being lies in a collective effort to achieve common goals, for example, general wage increases, rather than in the private pursuit of success."

The possible extrapolation of his findings to other groups of industrial workers was outside Chinoy's immediate objectives. Within the scope of his specific research task, he has done a commendable and necessary job.

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WHORF, BENJAMIN LEE. *Language, Thought, and Reality*. [Selected Writings, edited, with introduction, by John B. Carroll; foreword by Stuart Chase.] New York: Technology Press of Massachusetts Institute of Technology, and John Wiley. 1956. xi & 278 pp. \$7.

Whorf was a self-styled linguist who, under the guidance of Sapir, found the recognition of the academic fraternity. His most interesting work was done in the fields of North American Indian languages, especially Hopi. While the appraisal of his linguistic contributions must be left to the experts, his papers, because of his approach, are of great sociological interest. For him, linguistics was "essentially the quest for meaning" (p. 79), the meaning being defined in terms of the culture of which the language was a part. Thus he assumed that languages express, and form, the "naive world view" particular to specific cultures.

With various examples he attempted to demonstrate that grammatical structure influences observation, provides for a particular "segmentation of nature," selects specific aspects for attention, and especially provides a superimposed framework of time-and-space conceptions that may easily be the most conspicuous feature of what he calls "linguistic relativity." (His analysis of Hopi suggests strongly that, in that culture, there is a grammatically expressed time conception that resembles Bergson's notion of subjectively experienced "inner time" rather than our objective time concepts.)

For Whorf, linguistic patterns were a key for the understanding of what could almost be called the "spirit" of a culture. His representation of Hopi "preparing behavior," for instance, shows the Hopi individual embedded in the community's stream of life, within its "world," in which present activities of men are conscious preparation for the expected future. What Whorf derived here from a linguistic analysis was based on the utilization of other than conventionally narrow linguistic methods—based, for example, on an application of the Gestalt principle to the description of linguistic referents and situations, and on an attempt to ascertain hidden cultural meanings behind certain overt grammatical forms ("cryptotypes"). In the case of Hopi, these extensions led to results which seem to be well supported by the abundant anthropological evidence contained in the work of modern investigators and in Hopi personal documents, and which constitute a further contribution to the understanding of that culture.

As regards the utilization of linguistic research within the framework of anthropological investigations, Whorf applied approaches that promise a fruitful continuation of the pioneering work begun, more than fifty years ago, by none other than Franz Boas.

HELMUT R. WAGNER

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PROSS, HELGE. *Die deutsche akademische Emigration nach den Vereinigten Staaten, 1933-1941*, mit einer Einführung von Prof. Dr. Franz L. Neumann. Berlin: Duncker & Humblot. 1955. 69 pp.

A reader who is personally as well as generally familiar with the subject matter of this booklet is impressed by its wealth of detail and its careful perspective and balanced judgment. As a result of this care and balance there are more questions raised and discussed than are answered in a final verdict. The total phenomenon was too small in numbers and too diversified in personal qualities to permit much quantification, sampling, and generalization. The dual question of

the extent to which the German academic immigration was a gain for the United States and a gain for the emigres themselves cannot be answered in general terms; at best it can be dealt with only in a selective and differentiating way. But the conditions for a successful immigration, both in the objective situations of the various fields of learning and in individual qualities, are convincingly presented. Comparisons with earlier cultural emigrations, notably those of the Greek scholars to Italy in the fifteenth century and of the French Huguenots to Prussia in the late seventeenth century, shed light on parallels and differences, and the conceptual framework of the study is well explained.

Upward of one thousand German emigres arriving in the United States presented themselves as academic intellectuals, but only a few hundred cases can be traced in some detail, which typically means that they passed through the hands of the New School or the Emergency Committee in Aid of Displaced Foreign Scholars or the Rockefeller Foundation or the Friends Service Committee and Oberlander Trust. The influx continued after the outbreak of war because the invasion of European countries of refuge by Hitler's armies forced many into precipitate flight, to Cuba or other places where they could wait until arrangements for their immigration to the United States could be completed.

If, less prudent than the author, one were to venture a quite general impression, it would be that most refugee scholars did find a real haven—with the credit to be divided between the generosity of the recipient country and the ability and vitality of the newcomers—though in most cases their new social position was lower than it had been or would have been expected to be in the old country. This is due to the fact that in the United States the social prestige of academic life is generally lower than it is in Europe. A poll recently conducted by the sociology department of the University of Kiel, on the German social hierarchy as reflected in people's opinions, resulted in an overwhelming vote for professors as occupying the place of greatest honor and prestige (for a brief report see *Transactions of the Second World Congress of Sociology*, vol. 2, pp. 91-102); their place, in fact, was always high, although probably inferior to that of military officers prior to the first world war and possibly even in the Weimar period. Another point worth mentioning is that, while the bulk of the burden of providing for emigre scholars fell indeed on the United States, the relative contributions of Britain and Sweden were as large or larger, despite the much greater difficulties in such countries of established

cultural tradition; the same thing is true of Denmark, Norway, and particularly Holland before the invasions.

But the real problem is of a different order: how, and how well, did the new arrivals repay their debt to the generosity of the United States? The question concerns the typical contribution of the group as a whole, not that of the few celebrated men who had been outstanding before and continued to grow after overcoming the difficulties of the transition. But again, the physicists and mathematicians must be excluded as a group, because their professional language is international and no problem of adjustment to a new climate is involved. Thus the question really concerns the scholars in the humanities and social sciences: what are the emigre contributions there, if any?

Here the author properly differentiates. History of art and history of music are singled out as fields of study for which the scene was already set by American intellectual development; scholars in these fields found vast opportunities for their studies and teachings, built up numerous college departments and other institutions, and created in the process new positions for themselves and their American and European students and colleagues. On a much smaller scale something similar can be said of classical studies, which gained considerably, though they remained insignificant in the total picture. Philosophy, according to the author, made some moderate progress in its phenomenological branch, and logical positivism clearly found a fertile field for its work and cultivated it successfully. The enormous upswing of psychoanalysis is obviously connected with the immigration, which helped to make people conscious of their demand for it and met this demand. The author does not elaborate on psychology, but one may add that Gestalt studies are a distinctive addition to the field. In economics, sociology, and cultural anthropology the United States was already a leader, and these fields profited from the immigration only in so far as able persons were added to the roster in the established positivistic lines of thought and research, both in academic and in governmental positions; no new contributions were made that were comparable to the earlier and still continuing stimulation by the writings of Max Weber and Karl Mannheim in sociology and of Schumpeter in economics, and attempts to develop distinctive ideas in historical-political sociology and economics found no response. In political and intellectual history the more realistic-skeptical attitude of the immigrants helped to qualify the traditional American faith in progress, already shaken by world events. "Incomparably more favorable" than for economists and sociologists was the situation for emigre

political scientists, first through area studies in the training of the armed forces, then through their obvious qualifications for interpretation of the unprecedented world situation after the war.

One comment should be added to the author's survey. Since the reconsolidation of the situation in Europe there has been and continues to be a constant trickle back to West German, Austrian, and also Swiss universities on the part of such emigre scholars as are still remembered in the old country. For obvious reasons of age the movement cannot continue long. But it is not irrelevant in the total picture, because, far from being limited to cases of frustration, it includes a number of men from highly respected positions in leading American universities.

Dr. Pross acknowledges the benefit she received from the advice of the late lamented Franz Neumann, to whose memory her study is fittingly dedicated.

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